

Amyloid, hypometabolism, and cognition in Alzheimer disease

An [11C]PIB and [18F]FDG PET study

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Abstract—Objective: To investigate the association between brain amyloid load in Alzheimer disease (AD) measured by [11C]PIB-PET, regional cerebral glucose metabolism (rCMRGlc) measured by [18F]FDG-PET, and cognition. Methods: Nineteen subjects with AD and 14 controls had [11C]PIB-PET and underwent a battery of psychometric tests. Twelve of those subjects with AD and eight controls had [18F]FDG-PET. Parametric images of [11C]PIB binding and rCMRGlc were interrogated with a region-of-interest atlas and statistical parametric mapping. [11C]PIB binding and rCMRGlc were correlated with scores on psychometric tests. Results: AD subjects showed twofold increases in mean [11C]PIB binding in cingulate, frontal, temporal, parietal, and occipital cortical areas. Higher cortical amyloid load correlated with lower scores on facial and word recognition tests. Two patients fulfilling the clinical criteria for AD had normal [11C]PIB at baseline. Over 20 months this remained normal in one but increased in the cingulate of the other. Mean levels of temporal and parietal rCMRGlc were reduced by 20% in AD and these correlated with mini mental scores, immediate recall, and recognition memory test for words. Higher [11C]PIB uptake correlated with lower rCMRGlc in temporal and parietal cortices. Conclusion: [11C]PIB-PET detected an increased amyloid plaque load in 89% of patients with clinically probable Alzheimer disease (AD). The high frontal amyloid load detected by [11C]PIB-PET in AD in the face of spared glucose metabolism is of interest and suggests that amyloid plaque formation may not be directly responsible for neuronal dysfunction in this disorder.

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Amyloid plaques and neurofibrillary tangles are the pathologic hallmark of Alzheimer disease (AD). Postmortem studies suggest that amyloid deposition takes place decades before clinical symptoms of dementia appear. L2 Studies have shown correlation between neurofibrillary tangles (NFTs) and cognition, the relationship between amyloid plaque load and cognition is inconsistent.

The PET tracer [11C]PIB is an hydroxylated benzothiazole (N-methyl-[11-C]2-(4'-methylaminophenyl)-6-hydroxybenzo-thiazole) which has been used as an amyloid imaging agent.⁸ It was shown that there is a twofold increase in tracer retention in association

cortical areas of subjects with AD compared with controls. Similar results were subsequently reported by studies comparing the amyloid imaging agents [11C]SB-13 and [11C]PIB. An [11C]PIB PET study examining the relationship between brain amyloid load and CSF amyloid-β₄₂ has also replicated these findings. [18F]FDG measures the regional cerebral glucose metabolism (rCMRGlc), a marker of synaptic activity. [18F]FDG-PET studies show that rCMRGlc is decreased by 10 to 20% in temporoparietal, occipital cortical regions and posterior cingulate gyri in subjects with AD.

In this present study we sought to examine the correlation between regional brain amyloid plaque load, measured with [11C]PIB-PET, regional cerebral glucose metabolism, measured with [18F]FDG-PET, and behavioral performance of subjects with clinically diagnosed AD. We also

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Table 1 Demography and [11C]PIB uptake ratios

	AD	Controls	p Value
Demography			
Total no.	19	14	-
Age, y, mean ± SD	66.8 ± 5.6	64.8 ± 6.2	NS
Male	9/19	8/14	
Duration of diagnosis, months, mean ± SD	14.5 ± 6.5		
MMSE, mean ± SD	21.2 ± 3.9	29-30	< 0.0001
PIB uptake RATIO, mean ± SD			
Hippocampus	1.26 ± 0.19	1.16 ± 0.14	NS
Amygdalae	1.24 ± 0.22	1.05 ± 0.09	NS
Parahippocampus	1.36 ± 0.22	1.11 ± 0.10	< 0.01
Primary motor cortex	1.70 ± 0.33	1.26 ± 0.10	< 0.001
Primary sensory cortex	1.76 ± 0.38	1.21 ± 0.09	< 0.001
Primary visual cortex	1.63 ± 0.33	1.17 ± 0.10	< 0.001

AD = Alzheimer disease.

parametric mapping (SPM) to localize significant increases in [11C]PIB uptake in AD at a voxel level.

Methods. We recruited subjects from the Hammersmith Hospitals Trust and the National Hospital for Neurology and Neurosurgery, London, UK (table 1).

Of the 19 subjects with AD who had [11C]PIB-PET, 12 subjects also had [18F]FDG-PET within 6 weeks (mean 3.4 \pm 2.1). All the healthy controls were recruited from the spouses of the AD subjects. Subjects were assigned a diagnosis of clinically probable AD based on the National Institute of Neurologic and Communicative Diseases and Stroke/AD and Related Disorders Association (NINCDS-ADRDA) criteria. 12 All subjects had detailed neurologic assessments including taking a history from a close relative, examination, and routine blood analysis, and EEG. All AD subjects were treated with acetylcholine esterase inhibitors from the time of diagnosis. Eighteen of the 19 AD subjects had a detailed neuropsychometric assessment using the following tests: 1) Mini-Mental State Examination¹³ (MMSE), 2) Warrington short recognition memory tests (WRTM) for words and faces, 3) AD Assessment Scale Word List Learning test and 30 minute delayed recall,14 4) immediate and delayed recall of modified complex figure, 15 5) Digit Span forwards, 16 6) Trail Making Part A, 17 7) clock drawing,18 8) copy of modified complex figure,15 9) 30-item Boston Naming Test, 19 10) letter fluency (FAS), 20 11) category fluency (animals, birds, and dogs).

The inclusion criteria for AD subjects were as follows: 1) age 55 to 79, 2) AD based on NINCDS-ADRDA and Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria, 3) subjects with a clinical diagnosis of AD before they enrolled into the study, 4) adequate visual and auditory acuity to complete the psychological testing, 5) a reliable caregiver who could provide information about the patient's clinical symptoms, 6) completion of standard ADRC evaluation, and 7) capable of giving informed consent.

The exclusion criteria were 1) significant white matter microvascular disease on MRI, 2) depression, 3) current or a recent history of drug or alcohol abuse/dependence, 4) any significant disease or unstable medical condition that could influence neuropsychological testing, 5) pregnancy, 6) participants in whom MRI is contraindicated, 7) a history of schizophrenia, schizoaffective disorder, bipolar disorder, or any history of electroconvulsive therapy, 8) history of cancer within the last 5 years except skin and prostate cancer.

Similar exclusion criteria were also applied when selecting control subjects. Dementia was excluded in the control subjects by detailed clinical examination and neuropsychological testing. Permission to perform these studies was obtained from the Ethics Committee of the Hammersmith Hospitals Trust while permission to administer radiotracers was obtained from the Administration of Radioactive Substances Advisory Committee (ARSAC) UK.

MRI. MRIs were obtained with a 1.5 Tesla GE scanner. T1 volumetric MRI (three-dimensional T1 volume, pulse sequence RF-Fast, acquisition times repetition time 30 msec, echo time 3

msec, flip angle 30 degrees, field of view 25 cm, matrix 156 \times 256, voxel dimensions 0.98 \times 0.98 \times 1.6 mm) were acquired for coregistration and assessment of atrophy while T2-weighted images were acquired to rule out any structural abnormality in AD and control subjects.

[11C]PIB-PET. [11C]PIB was manufactured by Hammersmith Imanet, GE Healthcare, at the Cyclotron Building, Hammersmith Hospital. All subjects with AD and controls were scanned using a Siemens ECAT EXACT HR+ scanner²¹ with an axial field of view of 15.5 cm. Sixty-three transaxial image planes were displayed as 2.46-mm slices with a reconstructed axial resolution of 5.4 mm and a transaxial resolution of 5.6 mm. A 10-minute transmission scan was performed to measure tissue attenuation. Dynamic emission scans were acquired in three-dimensional mode. All subjects had an IV bolus injection of [11C]PIB. The mean injected dose was 370 (±20) MBq and mean specific activity of 20,235(±6,240) MBq/µmol. PET emission scans were acquired over 90 minutes using a predetermined protocol: time frames 1 × 15s, 1 × 5s, 1 × 10s, 2 × 30s, 9 × 60s, 3 × 180s, 14 × 300s. All data processing and image reconstruction was performed using standard Siemens software which included scatter correction.

Analysis of [11C]PIB-PET. Target region to cerebellum ratios (RATIO). The target region to cerebellar [11C]PIB uptake ratio image was created by dividing a mean 60- to 90-minute tracer uptake image by the integral 60- to 90-minute uptake value of cerebellar gray matter (figure E-1 on the Neurology Web site at www.neurology.org). Initially a 60- to 90-minute uptake image was created by integrating the activity collected from 60 to 90 minutes in Matlab 6. Single subject MRIs were coregistered to the 60- to 90-minute images using coregistration software (mpr).²² A cerebellar gray matter region of interest (ROI) was traced manually on the coregistered MRI. Mean cerebellar tracer uptake was then calculated by sampling the 60- to 90-minute image in Analyze AVW 6.1. The 60- to 90-minute image was then divided by the cerebellar uptake value to create a 60- to 90-minute ratio (RATIO) image using image calculator in Analyze AVW 6.1. Target to cerebellar ratios at these later times provide a blood flow independent measure of [11C]PIB retention that is easy to calculate, robust, rests on minimum assumptions, and does not require arterial sampling.23,24

ROI analysis. We used statistical parametric mapping software (SPM99, Wellcome Department of Imaging Neuroscience, UCL, London, UK; http://www.fil.ion.ucl.ac.uk/spm/ to 1) segment individual patient MRIs to gray, white, and CSF, 2) coregister PET to the individual MRIs, and 3) use individual MRIs to spatially transform these and the coregistered PET images into Montreal Neurologic Institute (MNI) standard stereotaxic space.

Transaxial planes of individual subject MRIs were oriented parallel to the AC-PC line. Integral images of [11C]PIB uptake were coregistered to their MRI counterparts using SPM99. Then, the individual 60 to 90' uptake RATIO images were coregistered to the corresponding MRIs. Both coregistered RATIO images and

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MRIs were subsequently spatially normalized to the T1 MRI template in MNII/CBM152 space using the default settings in SPM99. MRIs were segmented into gray matter, white matter, and CSF using SPM99, and gray matter images thresholded at 50% probability. We convolved this binarised gray matter map with the latest version of a probabilistic brain atlas. We then sampled [11C]PIB uptake RATIO images using Analyze AVW 6.1 in the following regions: frontal, temporal, and parietal association cortices, anterior and posterior cingulate gyrus, striatum, thalamus, and a cerebellar gray matter reference region (figure E-2). In addition, we examined hippocampus, amygdala, and parahippocampal gyrus, primary motor, primary sensory, and primary visual cortex.

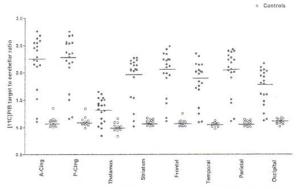
Statistical parametric mapping of [11C]PIB-PET. Clusters of significant differences in mean 60- to 90-minute [11C]PIB region to cerebellar uptake ratios between 19 AD subjects and 14 control subjects were also localized at a voxel level using SPM99. Spatially normalized RATIO images were interrogated using a threshold of p < 0.00001 with an extent threshold of 200 voxels to detect significant change without applying analysis of covariance (ANCOVA) or proportional scaling. As [11C]PIB uptake was high in AD compared with the healthy control subjects SPM was not able to interrogate the parametric images at a lower threshold for significance. We subsequently used a primary motor, primary sensory, and primary visual cortical ROI mask to allow us to evaluate these regions with a lower statistical threshold for significance using SPM.

[18F]FDG-PET scans. All subjects with AD and healthy controls were scanned using a Siemens ECAT EXACT HR+ scanner as described above. Subjects were asked to fast for 4 hours before the bolus injection of 185 (\pm 8) MBq of [18F]FDG. A 60-minute dynamic emission scan was acquired using predefined protocol with time frames 1 \times 15s, 1 \times 5s, 4 \times 10s, 4 \times 30s, 4 \times 60s, 4 \times 120s, and 9 \times 300s. All subjects had radial artery cannulation. Continuous online sampling was performed for 15 minutes and then discrete blood samples were taken at baseline, 5, 10, 15, 20, 30, 40, 50, and 60 minutes. A hematocrit was estimated from the baseline blood sample and plasma glucose levels were measured on selected samples.

Analysis of [18F]FDG-PET. Parametric maps of absolute rCMRGlc were generated with spectral analysis using an arterial input function as previously described. 26,27 We used a lumped constant of 0.48. For ROI analysis of [18F]FDG scans all the individual images were coregistered to their corresponding MRIs and then normalized to MNI space as described above for [11C]PIB. Gray and white matter were combined when creating the object map and the regions were sampled in the similar way as for [11C]PIB. We interrogated function of the anterior and posterior cingulate cortex, thalamus, striatum, frontal, temporal, parietal, and occipital cortical regions. In addition we examined hippocampus, amygdale, parahippocampal gyrus, and also sampled primary motor and primary sensory cortex rCMRGle.

Statistical parametric mapping of [18F]FDG-PET. A between group comparison of parametric rCMRGlc images of 12 AD and eight control subjects was performed employing SPM to localize significant changes in mean [18F]FDG uptake at a voxel level using a threshold of p < 0.001 with an extent threshold of 50 voxels. ANCOVA was applied to remove the confounding effects of global on regional uptake variance.

Statistical analysis. Statistical analyses were performed using SPSS for Windows version 12 (SPSS, Chicago, IL). Betweengroup regional differences were analyzed using Student t test. Individual AD subject values outside the control mean ± 2 SD were taken as statistically significant outliers. Correlations between regional [11C]PIB uptake with regional rCMRGlc were interrogated using Pearson's correlation. Whole cortical [11C]PIB and regional (posterior cingulate, frontal, temporal, parietal, and occipital) cortical [11C]PIB uptake were correlated with performance on neuropsychometric tests for the 18 subjects with AD using Spearman's rank correlation statistic. In 11 subjects with AD the regional cortical and hippocampal, amygdala, and parahippocampal rCMRGlc were correlated with neuropsychometric scores using Spearman's rank correlation. Colinearity between [11C]PIB imaging data and psychometric data were investigated using Partial Least Squares.²⁸ In short, the method uses singular value decomposition (SVD) to extract the factors of the crosscovariance matrix between ROI data and the psychometric scores.



Patients

Figure 1. Comparison between mean target region:cerebellar 60 to 90 minutes. [11C]PIB RATIO between 19 subjects with Alzheimer disease and 14 controls. Shows anterior cingulate, posterior cingulate, thalamus, striatum, frontal, temporal, parietal, and occipital regions significantly increased (p < 0.001).

Factors consist of a numerical load for both ROIs and psychometric scores. To each factor, SVD associates a singular value. For the purposes of this analysis, singular values were used to calculate the percentage of variance explained by each factor and Morgera's covariance complexity.²⁹

Results. [11C]PIB-PET. ROI analysis of [11C]PIB-PET data. Seventeen of the 19 (89%) subjects with AD showed (p < 0.001) raised [11C]PIB retention in association cortical and striatal areas in comparison to the healthy control group (figure 1). We found that levels of mean [11C]PIB uptake in AD hippocampus and amygdala were in the upper normal range while the parahippocampus showed a mild but significant 20% increase in [11C]PIB uptake in comparison to the control group. Primary cortical areas (motor, sensory, and visual cortex) showed around a 40% increase in amyloid load vs the control group (table 1), lower than the twofold increases seen in association cortical areas (figure 1).

Two of the 19 subjects with AD had regional [11C]PIB uptake that was within the range of control subjects. A 70-year-old woman (Case 1) was clinically diagnosed with AD 6 months before PET. The MRI showed mild cortical atrophy, but there was no significant hippocampal atrophy. This patient was reassessed 20 months later and [11C]PIB uptake was essentially unchanged, however, her behavioral performance had deteriorated. [18F]FDG-PET was normal on both occasions. The second patient (Case 2) was a 66-year-old man who was also clinically diagnosed with AD 6 months before PET. MRI showed generalized cortical atrophy but did not reveal significant hippocampal atrophy. His [11C]PIB uptake ratios at baseline were within two SD of the control mean. The neuropsychometric scores at the baseline and follow-up after 20 months were largely unchanged though some worsened or improved. His cingulate [11C]PIB uptake at 20 months had mildly increased: 1.40 in anterior cingulate gyrus (baseline = 1.17), 1.31 in posterior cingulate (baseline = 1.19), and was now above the normal range. He did not have baseline [18F]FDG-PET but a scan at 20 months showed a reduction in hippocampal rCMRGlc.

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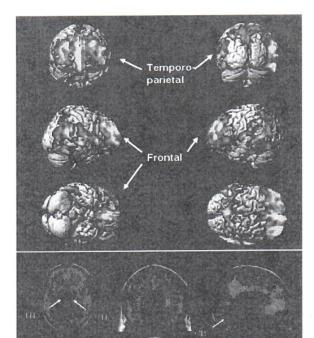


Figure 2. Localization of increased [11C]PIB uptake in Alzheimer disease compared with normal revealed by SPM, p < 0.00001. Primary motor (PM) and primary visual (PV) cortical areas, thalamus (TH), brainstem (BS), and cerebellum (CB) show no significant increase in PIB uptake compared with control subjects at that threshold.

Statistical parametric mapping of [11C]PIB-PET. SPM localized significantly increased mean [11C]PIB uptake in frontal, temporal, and parietal association areas and the striatum of the AD cohort in comparison to the control group. Primary motor, primary visual cortex, thalamus, and brainstem [11C]PIB uptake was not significantly raised at a threshold of p < 0.00001 vs the control group (figure 2). Using a mask to isolate primary motor, primary sensory, and primary visual areas [11C]PIB uptake was significantly raised at a threshold of p < 0.0001 in these regions.

[18F]FDG-PET. Analysis of [18F]FDG uptake. With ROI analysis, the AD group of 12 subjects showed mean rCMRGlc reductions of 23% in the posterior cingulate gyrus (p < 0.0006), 23% in the temporal cortex (p < 0.0005), 19% in the parietal cortex (p < 0.0002), and 17% in the occipital (p < 0.007) cortex compared to the control subjects (figure E-3). AD hippocampus showed a mean rCMRGlc reduction of 32% (p < 0.001) compared to the control group. AD amygdale showed a rCMRGlc reduction of 30% (p < 0.001), while parahippocampal gyrus showed a reduction of 27% (p < 0.001).

After normalization to whole brain glucose, posterior 504 NEUROLOGY 68 February 13, 2007

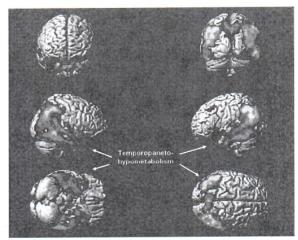


Figure 3. Reduction in temporoparietal glucose metabolism comparing 12 subjects with Alzheimer disease vs 8 controls in SPM (p < 0.001).

cingulate showed a relative reduction of 10.8% (p < 0.008), temporal cortex 10.6% (p < 0.001), and parietal cortex 5.9% (p < 0.0003) in AD subjects compared with healthy controls. SPM localized significant relative rCMRGlc decreases in temporoparietal and occipital regions in AD, but not in frontal regions (figure 3).

Individually, 10 of our 12 AD cases studied with FDG PET showed significant reductions in cortical rCMRGlc. Two cases, however, had normal levels of rCMRGlc, one of whom had raised and the other normal [11C]PIB uptake. A sub-analysis of hippocampus rCMRGlc showed individually decreased glucose metabolism in 9 of the 12 subjects. Those two who did not show decreased cortical hypometabolism also had normal hippocampal rCMRGlc. Primary motor and sensory cortex did not show a significant decrease in rCMRGlc in the subjects with AD. When individual rCMRGlc values were compared with [11C]PIB uptake ratios, lower rCMRGlc values correlated with higher [11C]PIB uptake ratios in temporal (p=0.047, r=-0.583) and parietal (p=0.041, r=-0.595) but not in frontal (p=0.998, r=0.001) cortical regions (figure 4).

Cognitive testing and [11C]PIB uptake in AD. The average neuropsychometry scores for the AD subjects and control subjects are detailed in table 2. Higher whole cortical [11C]PIB uptake correlated with lower scores on the Warrington short recognition memory test for words and faces. Amyloid load in frontal, temporal, parietal, and oc-

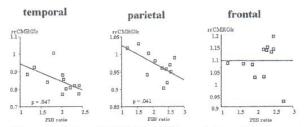


Figure 4. Higher [11C]PIB RATIO correlates with lower temporal and parietal rCMRGlc, while there is no correlation in the frontal region.

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Table 2 Memory tests of subjects with Alzheimer disease (AD) and control subjects

	MMSE	Immediate recall	Delayed recall	WRMT words	WRMT faces	Forward digit span	Trail Making A (sec)	Trail Making B	Boston Naming Test	Rey Copy	Letter fluency (FAS)	Category fluency
Controls, mean	29.4 (1.2)	8.2 (0.9)	7.8 (1.4)	24 (1.3)	21.2 (1.2)	7.7 (2.5)	32.4 (9.7)	69.6 (27.5)	26.2 (2.3)	23.9 (0.3)	46.9 (13.2)	52.4 (12.7)
AD, mean (SD) p Value	21.2 (3.9) <0.001	3.9 (1.7) <0.001	1.4 (2.6) <0.001	17.2 (3.5) <0.001	17.9 (3.2) <0.001	6.6 (1.7) <0.001	107 (81) <0.004	205 (112) <0.001	17.8 (6) <0.001	15 (3.5) <0.007	26.6 (11.8) <0.01	18.3 (11.1) <0.001

MMSE = Mini-Mental State Examination; WRMT = Warrington Recognition Memory Test.

cipital regions also correlated with performance on the Warrington short recognition memory tests for words and faces (table 3). Exclusion of the two AD subjects who had normal baseline levels of [11C]PIB uptake from the analysis abolished correlations between recognition memory scores and cortical amyloid load. Partial Least Square analysis revealed that the cross-covariance matrix had one dimension only (Morgera's Complexity 0.002) that consisted of one factor explaining 99% of the total covariance. This factor consisted of all sampled ROI and memory scores (short faces/short words). When the two subjects with AD with negligible PIB uptake were excluded, the amount of variance explained by the factor did not change significantly (94% of total covariance).

Relationship between cognitive testing and rCMRGlc in AD. We studied 11 subjects with AD. Levels of temporal lobe metabolism correlated with scores for the MMSE (Spearman's rho, $\rho=0.717,\,p=0.013$), immediate recall ($\rho=0.801,\,p=0.003$), category fluency test ($\rho=0.695,\,p=0.026$), and recognition memory for words ($\rho=0.650,\,p=0.030$). The hippocampal rCMRGlc correlated with immediate recall ($\rho=0.723,\,p=0.012$). Amygdale rCMRGlc correlated with the recognition memory for words ($\rho=0.632,\,p=0.037$). These correlations remained significant even after the exclusion of the one patient with AD with normal rCMRGlc levels.

Discussion. Our study demonstrates that uptake of the beta amyloid marker [11C]PIB is significantly increased in early AD vs healthy controls. This is consistent with findings reported in a previous study. Individually, 17 of our 19 clinically probable AD subjects revealed an increased amyloid plaque load and the group showed mean 2- to 2.5-fold increases in association cortical area and cingulate gyri [11C]PIB uptake vs the controls. This magnitude of increase in signal suggests that [11C]PIB-PET should prove a sensitive diagnostic marker for AD.

A striking feature of [11C]PIB uptake in AD is the

high frontal as well as temporoparietal signals. This pattern of [11C]PIB uptake has previously been described9 and, in fact, is in keeping with the known pathologic distribution of beta amyloid in AD.30 PIB is a neutral thioflavin which in AD brain slices shows nanomolar affinity for neuritic amyloid plagues but low affinity toward diffuse amyloid deposits and intracellular NFTs. Braak's pathologic studies have shown that the deposition of amyloid plaques in early AD takes place in both the basal frontal and temporal neocortex and then spreads to the adjoining neocortical areas and hippocampus.30 It could be argued that relative sparing of frontal blood flow could contribute to the relatively raised [11C]PIB signal in AD. However, blood flow independent DV images of [11C]PIB uptake generated with Logan plots or compartmental analysis also show increased frontal amyloid making this explanation unlikely.31

The relatively low [11C]PIB uptake by the hippocampus, amygdala, and parahippocampus compared with cortical association areas in AD has not been previously reported. As we did not use a partial volume correction it could be argued that the low [11C]PIB binding in these areas in part reflects atrophy, however, this explanation cannot fully explain the low specific signal as we found a twofold increase in anterior cingulate amyloid load, a structure of similar volume. Relatively late deposition of amyloid in the hippocampus has been described in neuropathologic studies.30 Our [11C]PIB and FDG PET findings coupled with neuropathologic observations are important as they suggest that amyloid deposition is not necessarily associated with neuronal dysfunction, as reflected by the reduced glucose metabolism in these areas, or impaired performance on tests of recall. This viewpoint is reinforced by the

Table 3 Spearman's rho (ρ) correlation with [11C]PIB uptake and neuropsychometry

	Posterior cingulate gyrus	Frontal	Temporal	Parietal	Occipital	Whole brain
WRMT words	$\rho = -0.455$	$\rho = -0.469$	$\rho = -0.494$	$\rho = -0.497$	$\rho = -0.529$	$\rho = -0.493$
	p = NS	p = 0.050	p = 0.037	p = 0.036	p = 0.024	p = 0.038
WRMT faces	$\rho = -0.355$	$\rho = 0.475$	$\rho = 0.469$	$\rho = -0.552$	$\rho = -0.523$	$\rho = -0.533$
	p = NS	p = 0.046	p = 0.050	p = 0.017	p = 0.026	p = 0.023

WRMT = Warrington Recognition Memory Test.

finding of increased amyloid load in frontal regions without associated reductions in glucose metabolism.

Graphical Logan analysis using an arterial plasma input function has been suggested to be the preferred method for [11C]PIB-PET analysis by Price et al.³¹ A more simplified ratio method has also been evaluated against arterial plasma input dependent methods.23 Target to cerebellum uptake ratios over 60 to 90 minutes provide a reliable method of analysis of [11C]PIB-PET scans, comparable results to Logan plot derived DVRs, and are simpler to generate.23,31 We have previously reported that 60 to 90 minute uptake RATIOs correlate closely with DV ratios generated by both compartmental modeling and spectral analysis using arterial input functions.24 The cerebellar time activity curves for [11C]PIB were not different between patient and control groups. The advantage of a 60 to 90' RATIO method is that it potentially shortens the scan time and the analysis is simple.

To date, the use of statistical parametric mapping (SPM) to interrogate [11C]PIB-PET findings has not been reported. In AD use of SPM localized widespread significant increases in [11C]PIB uptake in frontal, temporal, and parietal association cortices and also in striatum. SPM is voxel based and makes no a priori assumptions about the locations of significant differences. It allows the entire brain volume to be interrogated and so can detect changes which may not be picked up by an ROI analysis which requires a predefined template. Compared with the control subjects SPM detected no significantly increased [11C]PIB uptake in the brainstem and thalamus of AD subjects. It also showed that, despite the significant 2- to 2.5-fold increases in [11C]PIB binding in frontal, temporal, parietal, occipital regions, the increases in amyloid load in primary cortical areas (motor and visual) in AD did not reach significance at a threshold of p < 0.00001. Use of this strict threshold allowed us to see which regions are maximally affected. However, when a lower threshold of p < 0.0001 was employed and primary motor, primary sensory, and primary visual cortex were isolated with a mask SPM localized a significant uptake in these regions consistent with the ROI analysis. This is in line with the pathologic studies that suggest relatively late involvement of these regions in AD.32

[18F]FDG-PET showed the classic AD pattern of temporo-parietal and posterior cingulate hypometabolism in our subjects. 33,34 We were also able to demonstrate significantly decreased hippocampal and amygdalae glucose metabolism in 75% of individual subject with AD. Even though we did not attempt a partial volume correction, hippocampal hypometabolism has been reported to be one of the earliest functional changes in AD and mild cognitive impairment. 55 Other groups have also reported reductions in hippocampal, amygdale, and posterior cingulate hypometabolism in AD. 36,37 Lesion studies have documented amnesia in subjects with damage to hippocampi. 38 The hippocampal, parahippocampal gyri

and amygdale hypometabolism clearly demonstrates the involvement of the limbic cortex in AD. The reduced percentage reductions after normalization to global rCMRGlc are attributable to the globally decreased glucose metabolism in AD subjects compared with controls.

Along with only moderate increases in [11C]PIB uptake relative to association cortex, we found no significant reductions in rCMRGlc for the primary motor and sensory cortex rCMRGlc in AD compared with control subjects. There are differences in opinion concerning the involvement of the primary cortical areas in AD. Neuropathologic studies^{30,32,39} have shown that in the preliminary stages of disease there is involvement of the basal forebrain, the pathology then spreading to cortical association and only finally to primary cortical areas.

In our study we demonstrated that 17 out of 19 subjects with AD individually had increased levels of association cortical [11C]PIB binding while 10 out of 12 subjects showed decreased temporo-parietal [18F]FDG uptake. After 20 months one of the two AD subjects with normal [11C]PIB uptake at baseline, a 70-year-old woman, continued to show no significant change on imaging but she had deteriorated clinically. The other case, a 66-year-old man, showed mildly increased cingulate [11C]PIB uptake on follow-up and reduced hippocampal rCMRGlc compatible with AD. He was started on the cholinesterase inhibitor donepezil and reported subjective improvement though still has poor recall.

None of our 14 control subjects had raised levels of [11C]PIB uptake. It has been reported that the proportion of subjects exhibiting incidental amyloid deposits and neurofibrillary changes rises with advancing age.³² We presume that the lack of any significant uptake in our control subjects partly reflects their relatively young age (mean age 65).

Using neuropathologic confirmation as a gold standard, it has been reported that the sensitivity of a diagnosis of AD based on clinical criteria varies from 49 to 100% (average 81% across series) and specificity varies from 47 to 100% (average 70% across series).40 Pathologic studies have confirmed that it is possible to have significant memory problems without substantial plaque and tangle load especially in more elderly subjects. 6,41 These cases without significant plaque and tangle load presumably have mechanisms other than amyloid deposition underlying their memory impairment. Although we need pathologic confirmation for a definitive diagnosis, clinically our two [11C]PIB-PET negative subjects at baseline fulfilled the NINCDS-ADRDA criteria for a clinical diagnosis of AD and one of them now shows [11C]PIB PET findings compatible with early disease.

In our study we found a correlation between the amyloid deposition measured with [11C]PIB PET and reduced resting glucose metabolism reflected by [18F]FDG uptake in temporal and parietal regions while there was a lack of correlation between

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frontal amyloid load and metabolism. According to Braak staging frontal neurofibrillary tangles are formed relatively late in the disease process whereas frontal amyloid is found much earlier. [18F]FDG-PET reflects neuronal synaptic function and so probably is influenced more by intraneuronal tangle than extracellular plaque formation. This dissociation between amyloid load and glucose metabolism again raises the question about the role of plaque formation in the destruction of neurons.

Though the correlation between impaired performance on recognition memory tests for words and faces and cortical [11C]PIB uptake suggest that amyloid load contributes to cognitive impairment, the loss of this correlation on withdrawing the AD subjects with normal baseline [11C]PIB PET suggests that amyloid deposition alone is unlikely to explain memory difficulties. Pathologic studies on Down syndrome cases suggest that amyloid deposition may take place early in the disease process before neuronal damage and dementia occur.2 It is also reported that in neuropathologic studies there is stronger correlation between degree of dementia and neurofibrillary tangles density than amyloid plaque load.41,42 It is conceivable that amyloid deposition occurs alongside or before the intracellular processes that lead to cognitive difficulties. This viewpoint is reinforced by the stronger correlation of recognition with temporal cortical hypometabolism which survived removal of an AD case with normal FDG uptake. [18F]FDG-PET reflects the functional integrity of synapses rather than extracellular protein aggregation. Longitudinal [11C]PIB and [18F]FDG-PET studies of healthy controls and subjects with very mild memory problems will be necessary to further establish the exact relationship between amyloid plaque deposition and loss of neuronal synaptic function in AD.

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Amyloid, hypometabolism, and cognition in Alzheimer disease: An [11C]PIB and [18F]FDG PET study

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Amyloid, hypometabolism, and cognition in Alzheimer disease

An [11C]PIB and [18F]FDG PET study

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Abstract—Objective: To investigate the association between brain amyloid load in Alzheimer disease (AD) measured by [11C]PIB-PET, regional cerebral glucose metabolism (rCMRGlc) measured by [18F]FDG-PET, and cognition. Methods: Nineteen subjects with AD and 14 controls had [11C]PIB-PET and underwent a battery of psychometric tests. Twelve of those subjects with AD and eight controls had [18F]FDG-PET. Parametric images of [11C]PIB binding and rCMRGlc were interrogated with a region-of-interest atlas and statistical parametric mapping. [11C]PIB binding and rCMRGlc were correlated with scores on psychometric tests. Results: AD subjects showed twofold increases in mean [11C]PIB binding in cingulate, frontal, temporal, parietal, and occipital cortical areas. Higher cortical amyloid load correlated with lower scores on facial and word recognition tests. Two patients fulfilling the clinical criteria for AD had normal [11C]PIB at baseline. Over 20 months this remained normal in one but increased in the cingulate of the other. Mean levels of temporal and parietal rCMRGlc were reduced by 20% in AD and these correlated with mini mental scores, immediate recall, and recognition memory test for words. Higher [11C]PIB uptake correlated with lower rCMRGlc in temporal and parietal cortices. Conclusion: [11C]PIB-PET detected an increased amyloid plaque load in 89% of patients with clinically probable Alzheimer disease (AD). The high frontal amyloid load detected by [11C]PIB-PET in AD in the face of spared glucose metabolism is of interest and suggests that amyloid plaque formation may not be directly responsible for neuronal dysfunction in this disorder.

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Amyloid plaques and neurofibrillary tangles are the pathologic hallmark of Alzheimer disease (AD). Postmortem studies suggest that amyloid deposition takes place decades before clinical symptoms of dementia appear.^{1,2} Studies have shown correlation between neurofibrillary tangles (NFTs) and cognition,³⁻⁵ while the relationship between amyloid plaque load and cognition is inconsistent.^{6,7}

The PET tracer [11C]PIB is an hydroxylated benzothiazole (N-methyl-[11-C]2-(4'-methylaminophenyl)-6-hydroxybenzo-thiazole) which has been used as an amyloid imaging agent. It was shown that there is a twofold increase in tracer retention in association

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cortical areas of subjects with AD compared with controls. Similar results were subsequently reported by studies comparing the amyloid imaging agents [11C]SB-13 and [11C]PIB. An [11C]PIB PET study examining the relationship between brain amyloid load and CSF amyloid- β_{42} has also replicated these findings. [18F]FDG measures the regional cerebral glucose metabolism (rCMRGlc), a marker of synaptic activity. [18F]FDG-PET studies show that rCMRGlc is decreased by 10 to 20% in temporoparietal, occipital cortical regions and posterior cingulate gyri in subjects with AD.

In this present study we sought to examine the correlation between regional brain amyloid plaque load, measured with [11C]PIB-PET, regional cerebral glucose metabolism, measured with [18F]FDG-PET, and behavioral performance of subjects with clinically diagnosed AD. We also used statistical

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	AD	Controls	p Value
Demography			
Total no.	19	14	_
Age, y, mean \pm SD	66.8 ± 5.6	64.8 ± 6.2	NS
Male	9/19	8/14	_
Duration of diagnosis, months, mean \pm SD	14.5 ± 6.5	_	_
MMSE, mean \pm SD	21.2 ± 3.9	29–30	< 0.0001
PIB uptake RATIO, mean \pm SD			
Hippocampus	1.26 ± 0.19	1.16 ± 0.14	NS
Amygdalae	1.24 ± 0.22	1.05 ± 0.09	NS
Parahippocampus	1.36 ± 0.22	1.11 ± 0.10	< 0.01
Primary motor cortex	1.70 ± 0.33	1.26 ± 0.10	< 0.001
Primary sensory cortex	1.76 ± 0.38	1.21 ± 0.09	< 0.001
Primary visual cortex	1.63 ± 0.33	1.17 ± 0.10	< 0.001

AD = Alzheimer disease.

parametric mapping (SPM) to localize significant increases in [11C]PIB uptake in AD at a voxel level.

Methods. We recruited subjects from the Hammersmith Hospitals Trust and the National Hospital for Neurology and Neurosurgery, London, UK (table 1).

Of the 19 subjects with AD who had [11C]PIB-PET, 12 subjects also had [18F]FDG-PET within 6 weeks (mean 3.4 \pm 2.1). All the healthy controls were recruited from the spouses of the AD subjects. Subjects were assigned a diagnosis of clinically probable AD based on the National Institute of Neurologic and Communicative Diseases and Stroke/AD and Related Disorders Association (NINCDS-ADRDA) criteria.12 All subjects had detailed neurologic assessments including taking a history from a close relative, examination, and routine blood analysis, and EEG. All AD subjects were treated with acetylcholine esterase inhibitors from the time of diagnosis. Eighteen of the 19 AD subjects had a detailed neuropsychometric assessment using the following tests: 1) Mini-Mental State Examination¹³ (MMSE), 2) Warrington short recognition memory tests (WRTM) for words and faces, 3) AD Assessment Scale Word List Learning test and 30 minute delayed recall,14 4) immediate and delayed recall of modified complex figure, 15 5) Digit Span forwards, 16 6) Trail Making Part A, 17 7) clock drawing, 18 8) copy of modified complex figure, 15 9) 30-item Boston Naming Test, 19 10) letter fluency (FAS), 20 11) category fluency (animals, birds, and dogs).

The inclusion criteria for AD subjects were as follows: 1) age 55 to 79, 2) AD based on NINCDS-ADRDA and Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria, 3) subjects with a clinical diagnosis of AD before they enrolled into the study, 4) adequate visual and auditory acuity to complete the psychological testing, 5) a reliable caregiver who could provide information about the patient's clinical symptoms, 6) completion of standard ADRC evaluation, and 7) capable of giving informed consent.

The exclusion criteria were 1) significant white matter microvascular disease on MRI, 2) depression, 3) current or a recent history of drug or alcohol abuse/dependence, 4) any significant disease or unstable medical condition that could influence neuropsychological testing, 5) pregnancy, 6) participants in whom MRI is contraindicated, 7) a history of schizophrenia, schizoaffective disorder, bipolar disorder, or any history of electroconvulsive therapy, 8) history of cancer within the last 5 years except skin and prostate cancer.

Similar exclusion criteria were also applied when selecting control subjects. Dementia was excluded in the control subjects by detailed clinical examination and neuropsychological testing. Permission to perform these studies was obtained from the Ethics Committee of the Hammersmith Hospitals Trust while permission to administer radiotracers was obtained from the Administration of Radioactive Substances Advisory Committee (ARSAC) UK.

MRI. MRIs were obtained with a 1.5 Tesla GE scanner. T1 volumetric MRI (three-dimensional T1 volume, pulse sequence RF-Fast, acquisition times repetition time 30 msec, echo time 3

msec, flip angle 30 degrees, field of view 25 cm, matrix 156×256 , voxel dimensions $0.98 \times 0.98 \times 1.6$ mm) were acquired for coregistration and assessment of atrophy while T2-weighted images were acquired to rule out any structural abnormality in AD and control subjects.

[11C]PIB-PET. [11C]PIB was manufactured by Hammersmith Imanet, GE Healthcare, at the Cyclotron Building, Hammersmith Hospital. All subjects with AD and controls were scanned using a Siemens ECAT EXACT HR+ scanner²¹ with an axial field of view of 15.5 cm. Sixty-three transaxial image planes were displayed as 2.46-mm slices with a reconstructed axial resolution of 5.4 mm and a transaxial resolution of 5.6 mm. A 10minute transmission scan was performed to measure tissue attenuation. Dynamic emission scans were acquired in threedimensional mode. All subjects had an IV bolus injection of [11C]PIB. The mean injected dose was 370 (± 20) MBq and mean specific activity of 20,235(±6,240) MBq/μmol. PET emission scans were acquired over 90 minutes using a predetermined protocol: time frames 1×15 s, 1×5 s, 1×10 s, 2×30 s, 9×60 s, 3×180 s, 14 imes 300s. All data processing and image reconstruction was performed using standard Siemens software which included scat-

Analysis of [11C]PIB-PET. Target region to cerebellum ratios (RATIO). The target region to cerebellar [11C]PIB uptake ratio image was created by dividing a mean 60- to 90-minute tracer uptake image by the integral 60- to 90-minute uptake value of cerebellar gray matter (figure E-1 on the Neurology Web site at www.neurology.org). Initially a 60- to 90-minute uptake image was created by integrating the activity collected from 60 to 90 minutes in Matlab 6. Single subject MRIs were coregistered to the 60- to 90-minute images using coregistration software (mpr).22 A cerebellar gray matter region of interest (ROI) was traced manually on the coregistered MRI. Mean cerebellar tracer uptake was then calculated by sampling the 60- to 90-minute image in Analyze AVW 6.1. The 60- to 90-minute image was then divided by the cerebellar uptake value to create a 60- to 90-minute ratio (RATIO) image using image calculator in Analyze AVW 6.1. Target to cerebellar ratios at these later times provide a blood flow independent measure of [11C]PIB retention that is easy to calculate, robust, rests on minimum assumptions, and does not require arterial sampling.23,24

ROI analysis. We used statistical parametric mapping software (SPM99, Wellcome Department of Imaging Neuroscience, UCL, London, UK; http:www.fil.ion.uel.ac.uk/spm) to 1) segment individual patient MRIs to gray, white, and CSF, 2) coregister PET to the individual MRIs, and 3) use individual MRIs to spatially transform these and the coregistered PET images into Montreal Neurologic Institute (MNI) standard stereotaxic space.

Transaxial planes of individual subject MRIs were oriented parallel to the AC-PC line. Integral images of [11C]PIB uptake were coregistered to their MRI counterparts using SPM99. Then, the individual 60 to 90' uptake RATIO images were coregistered to the corresponding MRIs. Both coregistered RATIO images and

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MRIs were subsequently spatially normalized to the T1 MRI template in MNI/ICBM152 space using the default settings in SPM99. MRIs were segmented into gray matter, white matter, and CSF using SPM99, and gray matter images thresholded at 50% probability. We convolved this binarised gray matter map with the latest version of a probabilistic brain atlas. We then sampled [11C]PIB uptake RATIO images using Analyze AVW 6.1 in the following regions: frontal, temporal, and parietal association cortices, anterior and posterior cingulate gyrus, striatum, thalamus, and a cerebellar gray matter reference region (figure E-2). In addition, we examined hippocampus, amygdala, and parahippocampal gyrus, primary motor, primary sensory, and primary visual cortex.

Statistical parametric mapping of [11C]PIB-PET. Clusters of significant differences in mean 60- to 90-minute [11C]PIB region to cerebellar uptake ratios between 19 AD subjects and 14 control subjects were also localized at a voxel level using SPM99. Spatially normalized RATIO images were interrogated using a threshold of p < 0.00001 with an extent threshold of 200 voxels to detect significant change without applying analysis of covariance (ANCOVA) or proportional scaling. As [11C]PIB uptake was high in AD compared with the healthy control subjects SPM was not able to interrogate the parametric images at a lower threshold for significance. We subsequently used a primary motor, primary sensory, and primary visual cortical ROI mask to allow us to evaluate these regions with a lower statistical threshold for significance using SPM.

[18F]FDG-PET scans. All subjects with AD and healthy controls were scanned using a Siemens ECAT EXACT HR+ scanner as described above. Subjects were asked to fast for 4 hours before the bolus injection of 185 (± 8) MBq of [18F]FDG. A 60-minute dynamic emission scan was acquired using predefined protocol with time frames $1\times15s,\,1\times5s,\,4\times10s,\,4\times30s,\,4\times60s,\,4\times120s,\,$ and $9\times300s.$ All subjects had radial artery cannulation. Continuous online sampling was performed for 15 minutes and then discrete blood samples were taken at baseline, 5, 10, 15, 20, 30, 40, 50, and 60 minutes. A hematocrit was estimated from the baseline blood sample and plasma glucose levels were measured on selected samples.

Analysis of [18F]FDG-PET. Parametric maps of absolute rCMRGlc were generated with spectral analysis using an arterial input function as previously described. 26.27 We used a lumped constant of 0.48. For ROI analysis of [18F]FDG scans all the individual images were coregistered to their corresponding MRIs and then normalized to MNI space as described above for [11C]PIB. Gray and white matter were combined when creating the object map and the regions were sampled in the similar way as for [11C]PIB. We interrogated function of the anterior and posterior cingulate cortex, thalamus, striatum, frontal, temporal, parietal, and occipital cortical regions. In addition we examined hippocampus, amygdale, parahippocampal gyrus, and also sampled primary motor and primary sensory cortex rCMRGlc.

Statistical parametric mapping of [18F]FDG-PET. A between group comparison of parametric rCMRGlc images of 12 AD and eight control subjects was performed employing SPM to localize significant changes in mean [18F]FDG uptake at a voxel level using a threshold of p < 0.001 with an extent threshold of 50 voxels. ANCOVA was applied to remove the confounding effects of global on regional uptake variance.

Statistical analysis. Statistical analyses were performed using SPSS for Windows version 12 (SPSS, Chicago, IL). Betweengroup regional differences were analyzed using Student t test. Individual AD subject values outside the control mean \pm 2 SD were taken as statistically significant outliers. Correlations between regional [11C]PIB uptake with regional rCMRGlc were interrogated using Pearson's correlation. Whole cortical [11C]PIB and regional (posterior cingulate, frontal, temporal, parietal, and occipital) cortical [11C]PIB uptake were correlated with performance on neuropsychometric tests for the 18 subjects with AD using Spearman's rank correlation statistic. In 11 subjects with AD the regional cortical and hippocampal, amygdala, and parahippocampal rCMRGlc were correlated with neuropsychometric scores using Spearman's rank correlation. Colinearity between [11C]PIB imaging data and psychometric data were investigated using Partial Least Squares.28 In short, the method uses singular value decomposition (SVD) to extract the factors of the crosscovariance matrix between ROI data and the psychometric scores.

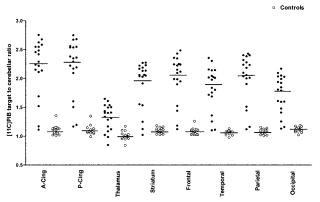


Figure 1. Comparison between mean target region:cerebellar 60 to 90 minutes. [11C]PIB RATIO between 19 subjects with Alzheimer disease and 14 controls. Shows anterior cingulate, posterior cingulate, thalamus, striatum, frontal, temporal, parietal, and occipital regions significantly increased (p < 0.001).

Factors consist of a numerical load for both ROIs and psychometric scores. To each factor, SVD associates a singular value. For the purposes of this analysis, singular values were used to calculate the percentage of variance explained by each factor and Morgera's covariance complexity.²⁹

Results. [11C]PIB-PET. ROI analysis of [11C]PIB-PET data. Seventeen of the 19 (89%) subjects with AD showed $\overline{(p < 0.001)}$ raised [11C]PIB retention in association cortical and striatal areas in comparison to the healthy control group (figure 1). We found that levels of mean [11C]PIB uptake in AD hippocampus and amygdala were in the upper normal range while the parahippocampus showed a mild but significant 20% increase in [11C]PIB uptake in comparison to the control group. Primary cortical areas (motor, sensory, and visual cortex) showed around a 40% increase in amyloid load vs the control group (table 1), lower than the twofold increases seen in association cortical areas (figure 1).

Two of the 19 subjects with AD had regional [11C]PIB uptake that was within the range of control subjects. A 70-year-old woman (Case 1) was clinically diagnosed with AD 6 months before PET. The MRI showed mild cortical atrophy, but there was no significant hippocampal atrophy. This patient was reassessed 20 months later and [11C]PIB uptake was essentially unchanged, however, her behavioral performance had deteriorated. [18F]FDG-PET was normal on both occasions. The second patient (Case 2) was a 66-year-old man who was also clinically diagnosed with AD 6 months before PET. MRI showed generalized cortical atrophy but did not reveal significant hippocampal atrophy. His [11C]PIB uptake ratios at baseline were within two SD of the control mean. The neuropsychometric scores at the baseline and follow-up after 20 months were largely unchanged though some worsened or improved. His cingulate [11C]PIB uptake at 20 months had mildly increased: 1.40 in anterior cingulate gyrus (baseline = 1.17), 1.31 in posterior cingulate (baseline = 1.19), and was now above the normal range. He did not have baseline [18F]FDG-PET but a scan at 20 months showed a reduction in hippocampal rCMRGlc.

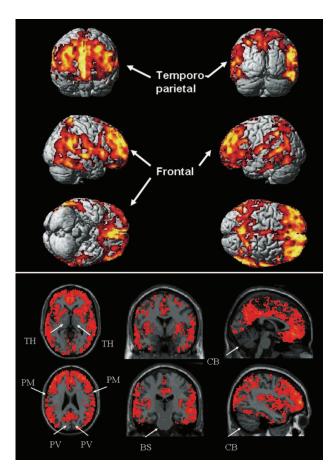


Figure 2. Localization of increased [11C]PIB uptake in Alzheimer disease compared with normal revealed by SPM, p < 0.00001. Primary motor (PM) and primary visual (PV) cortical areas, thalamus (TH), brainstem (BS), and cerebellum (CB) show no significant increase in PIB uptake compared with control subjects at that threshold.

Statistical parametric mapping of [11C]PIB-PET. SPM localized significantly increased mean [11C]PIB uptake in frontal, temporal, and parietal association areas and the striatum of the AD cohort in comparison to the control group. Primary motor, primary visual cortex, thalamus, and brainstem [11C]PIB uptake was not significantly raised at a threshold of p < 0.00001 vs the control group (figure 2). Using a mask to isolate primary motor, primary sensory, and primary visual areas [11C]PIB uptake was significantly raised at a threshold of p < 0.0001 in these regions.

[18F]FDG-PET. Analysis of [18F]FDG uptake. With ROI analysis, the AD group of 12 subjects showed mean rCMRGlc reductions of 23% in the posterior cingulate gyrus (p < 0.0006), 23% in the temporal cortex (p < 0.0005), 19% in the parietal cortex (p < 0.0002), and 17% in the occipital (p < 0.007) cortex compared to the control subjects (figure E-3). AD hippocampus showed a mean rCMRGlc reduction of 32% (p < 0.001) compared to the control group. AD amygdale showed a rCMRGlc reduction of 30% (p < 0.001), while parahippocampal gyrus showed a reduction of 27% (p < 0.001).

After normalization to whole brain glucose, posterior 504 NEUROLOGY 68 February 13, 2007

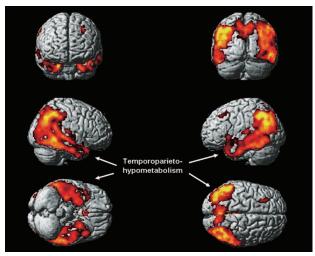


Figure 3. Reduction in temporoparietal glucose metabolism comparing 12 subjects with Alzheimer disease vs 8 controls in SPM (p < 0.001).

cingulate showed a relative reduction of 10.8% (p < 0.008), temporal cortex 10.6% (p < 0.001), and parietal cortex 5.9% (p < 0.0003) in AD subjects compared with healthy controls. SPM localized significant relative rCMRGlc decreases in temporoparietal and occipital regions in AD, but not in frontal regions (figure 3).

Individually, 10 of our 12 AD cases studied with FDG PET showed significant reductions in cortical rCMRGlc. Two cases, however, had normal levels of rCMRGlc, one of whom had raised and the other normal [11C]PIB uptake. A sub-analysis of hippocampus rCMRGlc showed individually decreased glucose metabolism in 9 of the 12 subjects. Those two who did not show decreased cortical hypometabolism also had normal hippocampal rCMRGlc. Primary motor and sensory cortex did not show a significant decrease in rCMRGlc in the subjects with AD. When individual rCMRGlc values were compared with [11C]PIB uptake ratios, lower rCMRGlc values correlated with higher [11C]PIB uptake ratios in temporal (p = 0.047, r = -0.583) and parietal (p = 0.041, r = -0.595) but not in frontal (p = 0.998, r = 0.001) cortical regions (figure 4).

Cognitive testing and [11C]PIB uptake in AD. The average neuropsychometry scores for the AD subjects and control subjects are detailed in table 2. Higher whole cortical [11C]PIB uptake correlated with lower scores on the Warrington short recognition memory test for words and faces. Amyloid load in frontal, temporal, parietal, and oc-

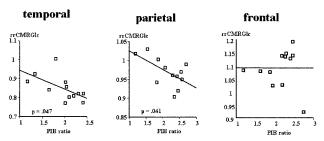


Figure 4. Higher [11C]PIB RATIO correlates with lower temporal and parietal rCMRGlc, while there is no correlation in the frontal region.

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	MMSE	Immediate recall	Delayed recall	WRMT words	WRMT faces	Forward digit span	Trail Making A (sec)	Trail Making B	Boston Naming Test	Rey Copy	Letter fluency (FAS)	Category fluency
Controls, mean	29.4 (1.2)	8.2 (0.9)	7.8 (1.4)	24 (1.3)	21.2 (1.2)	7.7 (2.5)	32.4 (9.7)	69.6 (27.5)	26.2 (2.3)	23.9 (0.3)	46.9 (13.2)	52.4 (12.7)
(SD)												
AD, mean (SD)	21.2(3.9)	3.9 (1.7)	1.4(2.6)	$17.2\ (3.5)$	17.9(3.2)	6.6(1.7)	107 (81)	$205\ (112)$	17.8 (6)	15(3.5)	26.6 (11.8)	18.3 (11.1)
p Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.004	< 0.001	< 0.001	< 0.007	< 0.01	< 0.001

MMSE = Mini-Mental State Examination; WRMT = Warrington Recognition Memory Test.

cipital regions also correlated with performance on the Warrington short recognition memory tests for words and faces (table 3). Exclusion of the two AD subjects who had normal baseline levels of [11C]PIB uptake from the analysis abolished correlations between recognition memory scores and cortical amyloid load. Partial Least Square analysis revealed that the cross-covariance matrix had one dimension only (Morgera's Complexity 0.002) that consisted of one factor explaining 99% of the total covariance. This factor consisted of all sampled ROI and memory scores (short faces/short words). When the two subjects with AD with negligible PIB uptake were excluded, the amount of variance explained by the factor did not change significantly (94% of total covariance).

Relationship between cognitive testing and rCMRGlc in AD. We studied 11 subjects with AD. Levels of temporal lobe metabolism correlated with scores for the MMSE (Spearman's rho, $\rho=0.717,\,p=0.013$), immediate recall ($\rho=0.801,\,p=0.003$), category fluency test ($\rho=0.695,\,p=0.026$), and recognition memory for words ($\rho=0.650,\,p=0.030$). The hippocampal rCMRGlc correlated with immediate recall ($\rho=0.723,\,p=0.012$). Amygdale rCMRGlc correlated with the recognition memory for words ($\rho=0.632,\,p=0.037$). These correlations remained significant even after the exclusion of the one patient with AD with normal rCMRGlc levels.

Discussion. Our study demonstrates that uptake of the beta amyloid marker [11C]PIB is significantly increased in early AD vs healthy controls. This is consistent with findings reported in a previous study. Individually, 17 of our 19 clinically probable AD subjects revealed an increased amyloid plaque load and the group showed mean 2- to 2.5-fold increases in association cortical area and cingulate gyri [11C]PIB uptake vs the controls. This magnitude of increase in signal suggests that [11C]PIB-PET should prove a sensitive diagnostic marker for AD.

A striking feature of [11C]PIB uptake in AD is the

high frontal as well as temporoparietal signals. This pattern of [11C]PIB uptake has previously been described9 and, in fact, is in keeping with the known pathologic distribution of beta amyloid in AD.³⁰ PIB is a neutral thioflavin which in AD brain slices shows nanomolar affinity for neuritic amyloid plaques but low affinity toward diffuse amyloid deposits and intracellular NFTs. Braak's pathologic studies have shown that the deposition of amyloid plagues in early AD takes place in both the basal frontal and temporal neocortex and then spreads to the adjoining neocortical areas and hippocampus.³⁰ It could be argued that relative sparing of frontal blood flow could contribute to the relatively raised [11C]PIB signal in AD. However, blood flow independent DV images of [11C]PIB uptake generated with Logan plots or compartmental analysis also show increased frontal amyloid making this explanation unlikelv.31

The relatively low [11C]PIB uptake by the hippocampus, amygdala, and parahippocampus compared with cortical association areas in AD has not been previously reported. As we did not use a partial volume correction it could be argued that the low [11C]PIB binding in these areas in part reflects atrophy, however, this explanation cannot fully explain the low specific signal as we found a twofold increase in anterior cingulate amyloid load, a structure of similar volume. Relatively late deposition of amyloid in the hippocampus has been described in neuropathologic studies.30 Our [11C]PIB and FDG PET findings coupled with neuropathologic observations are important as they suggest that amyloid deposition is not necessarily associated with neuronal dysfunction, as reflected by the reduced glucose metabolism in these areas, or impaired performance on tests of recall. This viewpoint is reinforced by the

Table 3 Spearman's rho (ρ) correlation with [11C]PIB uptake and neuropsychometry

	Posterior cingulate gyrus	Frontal	Temporal	Parietal	Occipital	Whole brain
WRMT words	$ ho = -0.455$ $p = ext{NS}$	$ \rho = -0.469 $ $ p = 0.050 $	$ \rho = -0.494 $ $ p = 0.037 $	$ \rho = -0.497 $ $ \rho = 0.036 $	$\rho = -0.529$ $p = 0.024$	$ \rho = -0.493 $ $ p = 0.038 $
WRMT faces	$ \rho = -0.355 p = NS $	$ \rho = 0.475 $ $ \rho = 0.046 $	$\rho = 0.469$ $p = 0.050$	$\rho = -0.552$ $p = 0.017$	$\rho = -0.523$ $p = 0.026$	$\rho = -0.533$ $p = 0.023$

WRMT = Warrington Recognition Memory Test.

finding of increased amyloid load in frontal regions without associated reductions in glucose metabolism.

Graphical Logan analysis using an arterial plasma input function has been suggested to be the preferred method for [11C]PIB-PET analysis by Price et al.³¹ A more simplified ratio method has also been evaluated against arterial plasma input dependent methods.23 Target to cerebellum uptake ratios over 60 to 90 minutes provide a reliable method of analysis of [11C]PIB-PET scans, comparable results to Logan plot derived DVRs, and are simpler to generate.^{23,31} We have previously reported that 60 to 90 minute uptake RATIOs correlate closely with DV ratios generated by both compartmental modeling and spectral analysis using arterial input functions.²⁴ The cerebellar time activity curves for [11C]PIB were not different between patient and control groups. The advantage of a 60 to 90' RATIO method is that it potentially shortens the scan time and the analysis is simple.

To date, the use of statistical parametric mapping (SPM) to interrogate [11C]PIB-PET findings has not been reported. In AD use of SPM localized widespread significant increases in [11C]PIB uptake in frontal, temporal, and parietal association cortices and also in striatum. SPM is voxel based and makes no a priori assumptions about the locations of significant differences. It allows the entire brain volume to be interrogated and so can detect changes which may not be picked up by an ROI analysis which requires a predefined template. Compared with the control subjects SPM detected no significantly increased [11C]PIB uptake in the brainstem and thalamus of AD subjects. It also showed that, despite the significant 2- to 2.5-fold increases in [11C]PIB binding in frontal, temporal, parietal, occipital regions, the increases in amyloid load in primary cortical areas (motor and visual) in AD did not reach significance at a threshold of p < 0.00001. Use of this strict threshold allowed us to see which regions are maximally affected. However, when a lower threshold of p < 0.0001 was employed and primary motor, primary sensory, and primary visual cortex were isolated with a mask SPM localized a significant uptake in these regions consistent with the ROI analysis. This is in line with the pathologic studies that suggest relatively late involvement of these regions in AD.32

[18F]FDG-PET showed the classic AD pattern of temporo-parietal and posterior cingulate hypometabolism in our subjects.^{33,34} We were also able to demonstrate significantly decreased hippocampal and amygdalae glucose metabolism in 75% of individual subject with AD. Even though we did not attempt a partial volume correction, hippocampal hypometabolism has been reported to be one of the earliest functional changes in AD and mild cognitive impairment.³⁵ Other groups have also reported reductions in hippocampal, amygdale, and posterior cingulate hypometabolism in AD.^{36,37} Lesion studies have documented amnesia in subjects with damage to hippocampi.³⁸ The hippocampal, parahippocampal gyri

and amygdale hypometabolism clearly demonstrates the involvement of the limbic cortex in AD. The reduced percentage reductions after normalization to global rCMRGlc are attributable to the globally decreased glucose metabolism in AD subjects compared with controls.

Along with only moderate increases in [11C]PIB uptake relative to association cortex, we found no significant reductions in rCMRGlc for the primary motor and sensory cortex rCMRGlc in AD compared with control subjects. There are differences in opinion concerning the involvement of the primary cortical areas in AD. Neuropathologic studies^{30,32,39} have shown that in the preliminary stages of disease there is involvement of the basal forebrain, the pathology then spreading to cortical association and only finally to primary cortical areas.

In our study we demonstrated that 17 out of 19 subjects with AD individually had increased levels of association cortical [11C]PIB binding while 10 out of 12 subjects showed decreased temporo-parietal [18F]FDG uptake. After 20 months one of the two AD subjects with normal [11C]PIB uptake at baseline, a 70-year-old woman, continued to show no significant change on imaging but she had deteriorated clinically. The other case, a 66-year-old man, showed mildly increased cingulate [11C]PIB uptake on follow-up and reduced hippocampal rCMRGlc compatible with AD. He was started on the cholinesterase inhibitor donepezil and reported subjective improvement though still has poor recall.

None of our 14 control subjects had raised levels of [11C]PIB uptake. It has been reported that the proportion of subjects exhibiting incidental amyloid deposits and neurofibrillary changes rises with advancing age.³² We presume that the lack of any significant uptake in our control subjects partly reflects their relatively young age (mean age 65).

Using neuropathologic confirmation as a gold standard, it has been reported that the sensitivity of a diagnosis of AD based on clinical criteria varies from 49 to 100% (average 81% across series) and specificity varies from 47 to 100% (average 70%) across series).40 Pathologic studies have confirmed that it is possible to have significant memory problems without substantial plaque and tangle load especially in more elderly subjects.^{6,41} These cases without significant plaque and tangle load presumably have mechanisms other than amyloid deposition underlying their memory impairment. Although we need pathologic confirmation for a definitive diagnosis, clinically our two [11C]PIB-PET negative subjects at baseline fulfilled the NINCDS-ADRDA criteria for a clinical diagnosis of AD and one of them now shows [11C]PIB PET findings compatible with early disease.

In our study we found a correlation between the amyloid deposition measured with [11C]PIB PET and reduced resting glucose metabolism reflected by [18F]FDG uptake in temporal and parietal regions while there was a lack of correlation between

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frontal amyloid load and metabolism. According to Braak staging frontal neurofibrillary tangles are formed relatively late in the disease process whereas frontal amyloid is found much earlier. [18F]FDG-PET reflects neuronal synaptic function and so probably is influenced more by intraneuronal tangle than extracellular plaque formation. This dissociation between amyloid load and glucose metabolism again raises the question about the role of plaque formation in the destruction of neurons.

Though the correlation between impaired performance on recognition memory tests for words and faces and cortical [11C]PIB uptake suggest that amyloid load contributes to cognitive impairment, the loss of this correlation on withdrawing the AD subjects with normal baseline [11C]PIB PET suggests that amyloid deposition alone is unlikely to explain memory difficulties. Pathologic studies on Down syndrome cases suggest that amyloid deposition may take place early in the disease process before neuronal damage and dementia occur.2 It is also reported that in neuropathologic studies there is stronger correlation between degree of dementia and neurofibrillary tangles density than amyloid plaque load. 41,42 It is conceivable that amyloid deposition occurs alongside or before the intracellular processes that lead to cognitive difficulties. This viewpoint is reinforced by the stronger correlation of recognition with temporal cortical hypometabolism which survived removal of an AD case with normal FDG uptake. [18F]FDG-PET reflects the functional integrity of synapses rather than extracellular protein aggregation. Longitudinal [11C]PIB and [18F]FDG-PET studies of healthy controls and subjects with very mild memory problems will be necessary to further establish the exact relationship between amyloid plaque deposition and loss of neuronal synaptic function in AD.

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Amyloid, hypometabolism, and cognition in Alzheimer disease: An [11C]PIB and [18F]FDG PET study

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ORIGINAL ARTICLE

Posterior parietooccipital hypometabolism may differentiate mild cognitive impairment from dementia in Parkinson's disease

David Garcia-Garcia · Pedro Clavero · Carmen Gasca Salas · Isabel Lamet · Javier Arbizu · Rafael Gonzalez-Redondo · Jose A. Obeso · Maria C. Rodriguez-Oroz

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Abstract

Purpose Patients with Parkinson's disease (PD) may have normal cognition, mild cognitive impairment (MCI) or dementia. We investigated differences in cerebral metabolism associated with these three cognitive states and the relationship between metabolism and cognitive dysfunction.

Methods FDG PET and a battery of neuropsychological tests were used to study PD patients with dementia (n=19), MCI (n=28) and normal cognition (n=21), and control subjects (n=20). Regional glucose metabolism in patients and controls was analysed using statistical parametric mapping (SPM8) corrected for age, motor severity and depression. Correlations between the mini-mental state examination score and Z-score values of the different cognitive domains with respect to cerebral FDG uptake were assessed using SPM8.

Results PD patients with MCI (PD-MCI patients) exhibited decreased FDG uptake in the frontal lobe, and to a lesser extent in parietal areas compared with cognitively normal patients. Patients with dementia showed reduced metabolism in the parietal, occipital and temporal areas and a less extensive reduction in the frontal lobe compared with PD-MCI patients, while widespread hypometabolism was seen in comparison with patients with normal cognition. PD-MCI patients exhibited reduced FDG uptake in the parietal and occipital lobes and in localized areas of the frontal and temporal lobes compared with controls, whereas patients with dementia showed a widespread reduction of cortical metabolism. Mini-mental state examination score correlated positively with metabolism in several lobes, executive function with metabolism in the parietooccipitotemporal junction and frontal lobe, memory with temporoparietal metabolism,

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visuospatial function with occipitoparietal and temporal metabolism, and language with frontal metabolism.

Conclusion PD patients with MCI exhibited hypometabolism in several cortical regions compared with controls, and in the frontal and parietal regions compared with cognitively normal patients. Hypometabolism was higher in patients with dementia than in those with MCI, mainly in the posterior cortical areas where it was correlated with visuospatial, memory and executive functions.

Keywords Parkinson's disease · Mild cognitive impairment · PET · Cerebral metabolism · Dementia

Introduction

Cognitive impairment is a frequent comorbidity in Parkinson's disease (PD), with a reported dementia prevalence of up to 80 % in long-term longitudinal studies [1, 2]. Mild cognitive impairment (MCI) is defined as a cognitive decline that is not normal for age but in which essentially normal functional activities can be maintained [3-6]. This condition is also common in PD and is considered a risk factor for the development of dementia [7]. As yet, the pattern of progression of the cognitive decline from MCI to dementia in PD patients has not been well defined, and longitudinal studies addressing the neuropsychological predictors of dementia in PD have yielded inconsistent results [6-9]. However, a longitudinal study on early PD concluded that patients with deficits in tasks with a more temporal and parietal lobe involvement ("posterior cortical" dysfunction) have a higher risk of developing dementia [10]. Similar results were found in a cross-sectional study assessing the cognitive changes characterizing the transition from MCI to dementia in PD [11]. In keeping with this, a recent longitudinal study involving FDG PET showed that patients who develop dementia have reduced baseline FDG uptake in the visual association area and posterior cingulate cortex [12].

Cross-sectional studies with FDG PET have revealed that dementia is associated with widespread areas of cortical hypometabolism [13–19], while in PD patients with MCI (PD-MCI patients), hypometabolism appears to be more localized to the temporoparietooccipital junction and the frontal cortex [18–20] compared with healthy controls. In addition, PD-MCI patients show reduced FDG uptake in the frontal and parietal regions with respect to cognitively normal PD (PDCN) patients [19, 21]. However, the metabolic changes that distinguish PD-MCI patients from PD patients with dementia (PDD) have not been studied as yet.

We hypothesized that PDD patients would have greater hypometabolism in posterior cerebral areas than PD-MCI patients. Here, we describe patterns of cerebral metabolism in PD-MCI patients compared with PDD patients and with PDCN patients. Our aim was to identify metabolic differences between the cognitive states in PD, specifically between dementia and MCI. We also report the correlations between cerebral metabolism and cognitive status in specific cognitive domains.

Material and methods

Subjects

A cross-sectional study was conducted in patients with PD diagnosed according to the UK Parkinson's Disease Society Brain Bank criteria [22] who were consecutively recruited from the Movement Disorders Unit of the Clinica Universidad de Navarra. Patients over 60 years of age and with a disease duration of at least 10 years were included, as this profile best represents the PD population with the highest risk of cognitive decline [23]. Exclusion criteria were other brain disorders, abnormal findings on MRI (i.e. tumour, hydrocephalus or severe vascular lesions), severe systemic disease, major psychiatric illness, prior cerebral surgery, abnormalities in thyroid function, positive VDRL test and low levels of vitamin B12 or folic acid. Healthy controls were recruited from among members of the Association of Blood Donors of Navarra (Spain). Controls with any history of neurological, psychiatric or major medical illness, memory complaints, scores below normal in the neuropsychological assessment or with MRI abnormalities were ruled out. The Ethics Committee for Medical Research of the University of Navarra approved the study, and all patients, or their legal representatives, and controls provided informed consent to participate in the study.

Motor assessments

The motor state in PD patients was assessed using the Hoehn and Yahr scale and the motor section of the unified Parkinson's disease rating scale (UPDRS-III) in the "off" (minimum of 12 h without anti-parkinsonian medication) and "on" states. Drug intake was recorded and dopaminergic treatment calculated in levodopa equivalents (Table 1).

Neuropsychological assessment

Global cognitive function was evaluated with the mini-mental state examination (MMSE) [24]. The Interview for Deterioration in Daily Living in Dementia (IDDD) scale [25] was used to assess functional independence. Depression was rated using the Geriatric Depression Rating Scale (GDS) of Yesavage et al. [26]. Different cognitive domains (verbal and visual memory, attention and executive function, language and visuospatial function) were evaluated using a battery of neuropsychological tests [27]. Memory was assessed using the Free and Cue Selective Reminding test of Buschke [28], the Cerad word list, and the delayed recall of two simple figures (Massachusetts General

Table 1 General features of the study groups

	Control (n=20)	PD (n=68)	PDCN (n=21)	PD-MCI (<i>n</i> =28)	PDD (n=19)
Age (years), mean (SD)	67.9 (3.1)	70.6 (6.4)	67 (7.1)	71.5 (3.8) ^b	73.1 (7.1) ^{a,b}
Male gender, n (%)	11 (55)	37(54.4)	15 (71.4)	14 (50)	8 (42.1)
Disease evolution (years)	_	13,6 (5.1)	12.4 (3.8)	14.1 (6)	14.3 (5.1)
UPDRS III "on", mean (SD)		20.8 (10.6)	16.4 (7.1)	17.7 (9.1)	30.8 (10.2) c,e
UPDRS III "off", mean (SD)	=	37.9 (12.4)	32.3 (8.4)	33.2 (13.3)	49.4 (10.3) b,d
Levodopa equivalents (mg/day), mean (SD)	_	1147 (585.7)	1062 (347.2)	1249 (700.8)	1088 (616.5)
GDS score, mean (SD)	4.4 (4.1)	9.9 (5.2) ^a	7.8 (5.2)	9.9 (4.9) ^a	12.8 (5.9) ^{a,b}
Hallucinations, n (%)	<u></u>	18 (26.5)	2 (9.5)	5 (17.8)	11 (57.9) ^{c,e}
Hoehn and Yahr scale score, mean (SD)	-	3 (0.8)	2.6 (0.6)	2.9 (0.7)	3.7 (0.7) c,e
Education (years), mean (SD)	9.8 (3)	10.2 (3.2)	11.7 (3.6)	9.9 (3.1)	9 (2.3)

a p<0.001 vs. control group

Hospital, Boston). Other tests used were the Raven's Progressive Matrices, semantic (animals) and phonetic (words starting with "p") verbal fluency [29], Trail Making Test parts A and B, the Stroop test and Digit Span Forward and Backwards task for attention and executive functions. The Boston naming test and verbal fluency were evaluated for language, and the copying of two simple figures and the two intersecting pentagons of the MMSE were used for testing visuospatial function. All tests were applied by two members of the team to control subjects and patients under treatment, and were used alongside the diagnostic criteria to diagnose PD patients as being cognitively normal, as having MCI or as having dementia.

Criteria for diagnosing cognitive status

The clinical diagnostic criteria for dementia in PD [30] were applied to diagnose dementia in the present study. MCI was diagnosed in nondemented patients when the following two features were present: (1) cognitive decline was reported by either the patient or informant, or observed by the neurologist, but the decline did not interfere significantly with the functional independence of the patient; (2) the patient scored more than 1.5 standard deviations below control values in at least two tests in the neuropsychological battery, either within a single cognitive domain or across different cognitive domains [31]. Values used to determine test score deviations in PD patients were taken from a sample of 20 age- and education-matched healthy control subjects. Individual neuropsychological test scores were transformed into Zscores using the mean and standard deviation of the control sample according to the following formula: (test score - median score from control sample)/standard deviation from control sample. Single-domain PD-MCI was diagnosed when abnormalities (the two abnormal tests) were present in a single cognitive domain. Multiple-domain PD-MCI was diagnosed when abnormalities were present in at least one test in two or more cognitive domains. In addition, to correlate the cognitive state with FDG uptake, the Z-score for the different domains was calculated from the average of the Z-scores of the tests assessing each domain. Patients not fulfilling criteria for MCI or dementia were considered to have cognitively normal PD.

FDG PET

Image data acquisition

Patients were studied in the "on" pharmacological condition (i.e. under the effect of their usual anti-parkinsonian dopaminergic medication). Central nervous system depressant drugs such as benzodiazepines, neuroleptics or antidepressive treatments were withdrawn according to their pharmacological kinetics. Additionally, subjects fasted overnight before PET scanning. Before injection of the radiopharmaceutical, blood glucose was checked and was <120 mg/dL in all patients. After a few minutes of rest in silence and with dimmed lighting, ¹⁸F-FDG (370 MBq) was injected intravenously, and subjects were required to rest for 40 min in the supine position on the PET scanner bed with their eyes closed. Then, 74 planes (128×128 matrix) were acquired with a voxel size of 2.06×2.06×2.06 mm during a 20-min scan using a Siemens ECAT EXAT HR+ scanner (Siemens, Knoxville, TN). A transmission scan in 3D mode for attenuation correction was performed at the end of the acquisition

b p < 0.05 vs. PDCN

c p < 0.001 vs. PDCN

 $^{^{\}rm d}p$ <0.05 vs. PD-MCI

^e p<0.001 vs. PD-MCI

period [32]. Images were reconstructed by means of a filtered back-projection method using ECAT software (version 7.2; Siemens).

Data analysis

Data were processed using statistical parametric mapping (SPM8) software (Wellcome Department of Neurology, London, UK) implemented in Matlab 7.13 (MathWorks Inc. Sherborn, MA). First, we created a customized FDG PET template using data from the control sample (n=20). For this purpose, all control subjects were scanned with a 1.5-T Siemens Symphony system using a three-dimensional T1weighted gradient-echo sequence (acquisition parameters: coronal acquisition, TR/TE/TI 1,900/3.36/1,100 ms, flip angle 15°, 144 slices, FOV 187×250 mm, matrix 192×256, voxel size 0.98×1.6×0.98 mm). Thus, control FDG PET images were coregistered with their corresponding MR images. MR images were segmented using the SPM8 segmentation tool [33] in MATLAB 7.0. Grey matter (GM) and white matter templates were generated from the entire image dataset using the DARTEL technique [34]. After an initial affine registration of the GM DARTEL templates to the tissue probability maps in Montreal Neurological Institute (MNI) space [35], nonlinear warping of the GM images was performed to normalize them onto the MNI space. The spatial normalization parameters of each MR image were then applied to each corresponding coregistered FDG PET image. The FDG PET template was obtained by averaging the spatially normalized PET images and smoothing using an isotropic gaussian filter with a full-width at half-maximum of

All FDG PET images were spatially normalized into a standard stereotactic MNI space using the customized FDG template. For every spatially normalized PET image, voxel values were normalized to pons activity (becquerels per centimetre cubed) using the pons volume of interest (Nifti format) from WFU PickAtlas v3.0 [12, 36-38]. Finally, the resulting PET scans were smoothed with an isotropic gaussian filter with a full-width at half-maximum of 8 mm. Changes in metabolism were assessed by analysis of the preprocessed images using one-way analysis of variance. Age and GDS score were included as covariates for the metabolism comparison between controls and patients, while for the metabolism comparison between the different groups of patients, age, UPDRS-III and GDS scores were included as covariates. Significance was set at p<0.05 and corrected for multiple comparisons, i.e. a false discovery rate (FDR) with a cluster size of >20 voxels. In the comparison between PD-MCI and PDCN patients in which less significant differences would be expected, significance was set to p<0.001 uncorrected, similar to previous works in the field [18, 19]. The correlation between the MMSE, UPDRS-

III, GDS scores and Z-scores of the different cognitive domains and glucose metabolism was assessed in PD patients using regression analysis and significance set at p < 0.001 uncorrected, with a cluster size of >20 voxels.

The coordinates of the voxel peaks were transformed into Talairach space using the mni2tal program by Dr. M. Brett (http://imaging,mrc-cbu.cam.ac.uk/imaging/MniTalairach) and their anatomical locations were found using Talairach Daemon Client [39].

Statistics

Differences in the demographic and clinical characteristics between the PD groups and controls were analysed using Fisher's exact test in cases of categorical variables, analysis of variance with post-hoc Bonferroni's multiple comparison in cases of continuous, normally distributed variables, and the Kruskal-Wallis and Mann-Whitney U tests for continuous, nonparametric variables. The normality of the distributions of clinical and demographic variables was assessed using the Kolmogorov-Smirnov test. A value of p < 0.05 was considered to indicate statistical significance.

Results

Clinical data

The subjects included 20 controls and 68 PD patients (21 PDCN, 28 PD-MCI, and 19 PDD). The demographic and clinical characteristics of all groups are summarized in Table 1. With the exception of a higher GDS score, PD patients did not differ from control subjects. PDD patients were older than controls and PDCN patients. They also had higher GDS scores than PDCN patients, and had more severe parkinsonism (UPDRS and Hoehn and Yahr scores) and more hallucinations than PDCN and PD-MCI patients. The PD-MCI patients were older than PDCN patients, with no other differences in clinical features.

Compared with the controls and PDCN patients, PDD patients had poorer scores in all neuropsychological tests, while with respect to PD-MCI patients, they had poorer scores in all but the recall of figures and word delayed recall tests (Supplementary Table 1). PD-MCI patients in turn had lower scores than PDCN patients for all tests, with the exception of the Buschke and the copying of simple figures and intersecting pentagon tests. The cognitive domains affected in PD-MCI patients were as follows: three patients (10.7 %) had only the executive domain affected; 14 patients (50 %) had two domains affected (executive and memory in nine patients, executive and visuospatial in four patients, executive and language in one patient); six patients (21.4 %) had three domains affected (executive, memory

and language in five patients, and executive, visuospatial and memory in one patient); and five patients (17.4 %) had four domains affected. No differences were found between controls and PDCN patients (Supplementary Table 1).

Regional differences in FDG PET

Comparison between PD groups

PDD patients had extensive bilateral areas of reduced FDG uptake in the frontal, parietal, occipital and temporal lobes and in the posterior cingulate cortex compared with PDCN patients (Fig. 1A). PDD patients had a lower metabolism mainly in posterior brain areas (parietal, occipital and temporal lobes) than PD-MCI patients, and also, albeit to a lesser extent, in the right frontal lobe (Fig. 1B; Supplementary Table 2). Compared with PDCN patients, PD-MCI patients did not exhibit regions of reduced metabolism. However, using a relatively lower conservative threshold (p<0.001 uncorrected), PD-MCI patients showed hypometabolism that was mainly localized in the left frontal lobe and to a lesser extent in the left parietal lobe (Fig. 1C; Supplementary Table 2). PDCN patients did not show reduced FDG uptake in any region compared with PDD and PD-MCI patients. Likewise, PD-MCI patients did not show reduced FDG uptake in any region compared with PDD patients.

Comparison between PD groups and controls

As expected, PDD patients showed an extensive bilateral reduction in FDG uptake in the frontal, parietal, occipital and temporal lobes, in the anterior cingulate cortex, and in the caudate nucleus compared with controls (Fig. 2A; Supplementary Table 3). In PD-MCI patients, more localized hypometabolic areas were identified in the parietal (mainly in the angular gyrus) and occipital lobes, and to a lesser extent in the frontal and temporal lobes (Fig. 2B; Supplementary Table 3). PDCN patients did not show hypometabolic areas compared with controls. No regions of reduced metabolism were identified in the control subjects compared with the PD patients.

Correlation between cerebral metabolism and cognitive state in PD patients

A positive correlation between FDG uptake and MMSE score in all PD patients was observed for uptake in the parietal, occipital, temporal and frontal lobes, and in the anterior cingulate cortex and caudate nucleus using GDS and UPDRS-III scores and age as nuisance variables (Fig. 3). In addition, there were positive correlations between the Z-score of cognitive domains and FDG uptake as follows: executive function in the parietal, frontal and occipitotemporal junction; memory with temporal and parietal regions; visuospatial function with posterior areas (occipitoparietal and temporal) uptake; and language with anterior areas mainly the frontal lobe (Fig. 4). No correlation between the GDS score and FDG uptake was observed.

Regions with hypermetabolism and clinical correlation

Compared with control subjects, PD patients exhibited increased metabolism in the putamen, thalamus and cerebellum and in the motor cortical (paracentral gyrus) areas bilaterally, but there were no differences among the PD

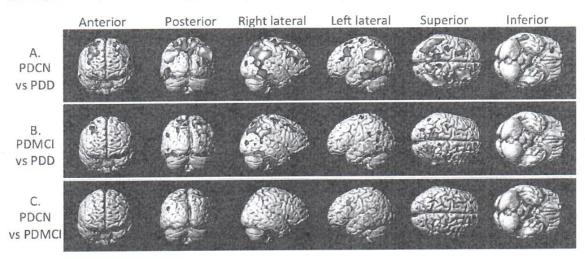


Fig. 1 Regions with reduced metabolism comparing PDD, PD-MCI and PDCN patients: A PDD<PDCN, B PDD<PD-MCI, C PD-MCI<PDCN (p <0.05 FDR corrected for A and B; p<0.001 uncorrected for C; age, GDS and UPDRS III score as covariates in all comparisons)

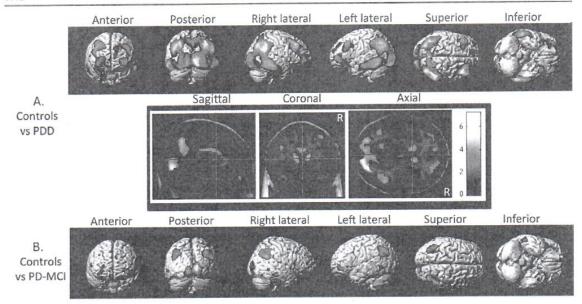


Fig. 2 Regions with reduced metabolism comparing PDD patients and PD-MCI patients with respect to control subjects: A PDD<controls, B PD-MCI<controls (p<0.05 FDR corrected; age and GDS score as covariates)

groups (Fig. 5A–C). Moreover, FDG uptake in cortical areas was positively correlated with the UPDRS-III score but there was no correlation with the MMSE score (Fig. 5D).

Discussion

We compared cerebral FDG uptake in PDCN, PD-MCI and PDD patients, and control subjects. A major finding was that with respect to PDCN patients, PD-MCI patients

showed a reduction in metabolism that predominated in the frontal lobe and to a lesser extent in the parietal lobe. In contrast, hypometabolism in PDD patients compared with PD-MCI patients was mainly located in posterior brain regions (parietal, occipital and posterior temporal areas) and to a lesser extent in the frontal lobe. We also found that, compared with controls, PDD and PD-MCI patients shared a common pattern of reduced metabolism in the parietal and occipital lobes, and to a lesser extent in the frontal and temporal lobes. However, in PDD patients the cortical

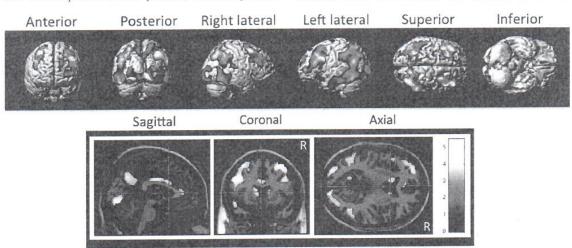


Fig. 3 Positive correlations between MMSE score and FDG uptake in all PD patients (p<0.001 uncorrected; age, GDS and UPDRS-III as covariates)



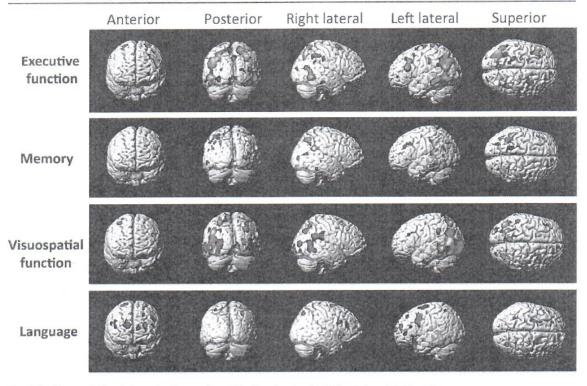


Fig. 4 Positive correlations between the Z-score of cognitive domains altered in PD patients and FDG uptake

hypometabolism was more widespread affecting wider cortical and subcortical areas compared to that seen in control subjects. Taken together, our data suggest that dementia in PD is characterized by a more intense and widespread cerebral hypometabolism than MCI in PD patients and that this hypometabolism predominates in posterior cortical areas. We also found that deficits in different cognitive domains in PD were associated with reduced cerebral metabolism involving different brain regions. Thus, our results further define aspects of cerebral metabolism associated with MCI and dementia in PD.

Most previous studies have focused on comparing the cerebral metabolism of PD patients with that of control subjects [13–17, 20], but putative distinctive features among the different cognitive states in PD have been poorly elucidated. While a reduction in FDG uptake in the posterior and frontal cortices of PD-MCI patients compared with PDCN patients has been identified in some studies [18, 19, 21], no study has been carried out to compare differences between PD-MCI and PDD patients. A cross-sectional study [11] demonstrated that dementia differs from MCI by both a generalized failure in executive function and the addition of "posterior cortical dysfunction" (naming and clock copy tests). Further to this, the Cambridge longitudinal study showed that PD patients with deficits in tasks revealing a

predominant temporal and parietal lobe ("posterior cortical") dysfunction have a higher risk of dementia than those with only a frontal executive dysfunction [10]. In keeping with this, a recent longitudinal study showed that patients who develop dementia after 3.9 years of follow-up have a low performance in delayed visual reproduction learning and a reduced FDG uptake in the visual association and posterior cingulate cortex at baseline compared to controls [12]. In addition, hypometabolism in the parietooccipitotemporal and medial temporal brain has been correlated with visuospatial and mnemonic functioning in PD patients [40]. Here we report that PDD patients have reduced FDG uptake compared with PD-MCI patients mainly in the parietal, occipital and posterior temporal areas, supporting the notion that a cognitive deficit based on posterior cortical function (i.e. visuospatial and memory) is the main difference between the two cognitive states.

We also found that PD-MCI patients exhibited a reduction in metabolism in the frontal and parietal lobes compared with PDCN patients. Previous FDG PET studies have shown similar results [19] or more extensive hypometabolism in the posterior cortex [18, 21]. The discrepancy is probably due to the different criteria used for the diagnosis of MCI. For example, when a clinical scale (the clinical dementia rating scale) for staging the severity of dementia was used

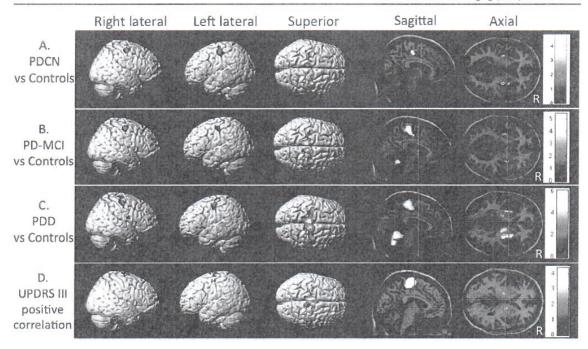


Fig. 5 Regional increases in metabolism comparing PDD, PD-MCI and PDCN patients with respect to control subjects: A PDCN>controls; B PD-MCI>controls; C PDD>controls (p<0.05 FDR corrected; age

and GDS score as covariates). D Positive correlation between UPDRS III score and FDG uptake (p<0.001 uncorrected)

and MCI was diagnosed for a score of 0.5, corresponding to very mild dementia, patients with MCI had more extensive hypometabolism in the posterior cortex than PDCN patients [18]. In a similar manner to Huang et al. [19], we used a more stringent diagnostic criterion based on 1.5 standard deviations in neuropsychological test scores with respect to control subjects' scores. This approach probably resulted in the classification of PD-MCI patients with lower levels of cognitive deficits. Consequently, these data also reinforce the association between more severe cognitive deficits and a higher level of posterior cortical hypometabolism.

It should be noted that the diagnostic criteria for MCI are still under development, and MCI in PD requires further definition [31]. Currently, MCI in PD includes different cognitive abnormalities depending upon the number and type of cognitive domains affected. As yet, whether a given subtype of MCI in patients with PD might confer a higher risk of developing dementia has not been clarified. A single prospective study in a small number of patients showed that single and multiple-domain non-amnestic forms of MCI were more associated with the development of dementia 4 years later [7]. Although ongoing longitudinal studies will eventually clarify this point, it is probable that PD patients with multiple-domain MCI have a more severe or advanced cognitive decline than those with single-domain forms, and therefore are at a higher risk of developing dementia. In this

sense, previous cerebral FDG PET studies did not highlight differences between PD patients with single-domain MCI and those with normal cognition. In contrast [19, 21], patients with multiple-domain MCI showed reduced metabolism in the frontal and parietal lobes, and less consistently in the temporal lobe than PDCN patients [18, 19, 21]. In the present study, all but three patients with PD-MCI had a multiple-domain type of MCI, giving more consistency to the differences found in cerebral metabolism underlying each cognitive state in patients with PD [10, 11].

We have also demonstrated a relationship between metabolic findings and cognitive state given the correlations observed between the severity of the global and cognitive domain deficits measured by MMSE and the corresponding Z-scores, respectively, and regions of reduced metabolism in PD patients after correcting for age, depression (GDS score) and motor severity (UPDRS-III). We found that executive function mainly correlated with metabolism in the parietooccipitotemporal junction and frontal lobe, while memory correlated with metabolism in the temporal and parietal regions, and visuospatial function correlated with posterior areas (occipitoparietal and temporal). In contrast, language was correlated with metabolism in anterior (mainly frontal) areas. These results are in keeping with those of previous studies in PD patients showing that bilateral hypometabolism in the frontal and parietal regions and in the parietooccipitotemporal and

medial temporal brain correlate with executive dysfunction [41–45] and visuospatial and mnemonic functioning, respectively [40]. Although partially limited by the lack of data in normal individuals, the correlations reported here also indicate that the higher posterior hypometabolism in PDD with respect to PD-MCI patients is related to a worsening of executive dysfunction and to the addition of visuospatial and memory deficits.

This was a cross-sectional study seeking to identify metabolic differences between PDD and PD-MCI patients. Considering that MCI forms part of the cognitive decline preceding the development of dementia, only large longitudinal studies will allow a better definition of clinical MCI and of the changes that characterize the transition from MCI to dementia. Our findings therefore require confirmation in prospective studies with a larger number of patients. Nevertheless, we have studied a large number of PD patients considered to be at high risk of developing dementia [23]. Indeed, it has been reported that the development of substantial abnormalities in the defined cognitive network expression in PD takes places by the end of the first decade following clinical onset [14]. Patients in our study were studied while under dopaminergic treatment, but the doses were not different between the different groups and it is known that dopaminergic drugs do not have a significant impact on the pattern of cognitive expression detected in FDG PET [14, 41]. Moreover, there were no differences in other treatments that could have interfered with the results; for example, only three PDD patients [46] were receiving treatment with cholinesterase inhibitors, which would have increased the FDG uptake [46].

The disease duration was not different among the groups, but one limitation of this study is that, due to the natural course of the disease and the age at which dementia most frequently occurs, PDD patients exhibited a greater degree of motor disability than patients in the other groups, were older on average and had higher depression scale scores than PDCN patients and controls [16, 17, 47-50]. It should be noted that the metabolic pattern related to motor aspects is different from that related to cognition [14]. In addition, we did not identify any correlation between depression score and cerebral metabolism. However, the data were corrected for age, motor severity and depression, and therefore we believe the results would not have been significantly affected by these factors. Further to this, the validity of our data is reinforced by the fact that the metabolic patterns in the PD groups studied here in comparison with control subjects are similar to those reported in the literature [13-18, 51]. Moreover, the subcortical (putamen and thalamus) and motor cortical (paracentral gyrus) hypermetabolic areas encountered in all groups of PD patients were also in keeping with the PD-related motor pattern [52, 53], and actually correlated positively with the UPDRS-III score. In

addition, we used a more advanced version of the software for image analysis (i.e. SPM8) and corrected our data more thoroughly than in previous studies (FDR corrected at p < 0.05). Admittedly, as a result of the use of this conservative threshold, PD-MCI patients did not show regions of reduced metabolism compared with PDCN patients. Thus, differences between PD-MCI and PDCN patients were obtained only with the less-conservative analysis (uncorrected p < 0.001). However, the metabolic differences previously reported between these two groups of patients (PD-MCI and PDCN) have also been obtained with uncorrected data [18, 19, 21].

Conclusion

Our study demonstrated that PD-MCI patients exhibited hypometabolism (decreased FDG uptake) in numerous cerebral areas compared with controls, and in the frontal and parietal regions compared with PDCN patients. In contrast, dementia in PD was characterized by a more expansive cerebral hypometabolism than MCI, with predominance in the posterior cortical areas. The reduction in FDG uptake in these posterior areas correlated with poorer outcomes in visuospatial, memory and executive functions. Taken together, these results indicate that dementia in PD is associated with a worsening of executive dysfunction along with an impairment of visuospatial and memory function.

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Conflicts of interest Maria C. Rodriguez-Oroz is on the advisory board of UCB Spain. She has received payment for lectures, as well as travel and accommodation to attend scientific meetings from GlaxoSmithKline, UCB, Lundbeck and Medtronic. She has received research funding from national and regional government bodies in Spain. Jose Obeso has served previously on the Advisory Board of GSK (UK), and received honorarium for lectures given at meetings organized by GSK (Spain), Lundbeck-TEVA and UCB. Grants/Research: Funding from Spanish Science and Education Ministry and European Union (REPLACES). The other authors have no conflicts of interest to report concerning the research dealt with in this manuscript.

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Supplementary Table 1: Neuropsychological test scores of the different groups.

	Control (n=20)	PDCN (n=21)	PD-MCI (n=28)	PDD (n=19)	PD-MCI vs PDCN	PDD vs PD-MCI
MMSE	30 (28-30)	29.5 (28.7-30)	28 (25-29)	18.5 (15.7-21.2)	p<0.01	p<0.01
IDDD	33 (33-34)	33 (33-34)	36 (33.7-39)	49 (42.7-57.5)	p<0.01	p<0.01
Phonemic fluency	14.5 (11-18)	16 (9.5-22)	10 (7-12)	6.5 (2.2-9)	p<0.01	P<0.05
Semantic fluency	18 (15-21.5)	18.5 (15.7-22.7)	11 (9-15)	8 (5.2-10)	p<0.01	p<0.01
Stroop-Words	96 (84-105)	93 (80-100)	64.5 (53.2-84)	41 (13-54.5)	p<0.01	p<0.01
Stroop-Color	60 (50-65)	55 (48.5-65)	41.5 (35.7-50)	28.5 (10.7-34.5)	p<0.01	p<0.01
Stroop Word-Color	30 (25-32)	28 (24.5-35.5)	18.5 (12-22.5)	12 (8-15.7)	p<0.01	P<0.05
Raven	27 (26-30.5)	28.5 (25-31.2)	21 (18-25.5)	9 (2-18)	p<0.01	p<0.01
Trail A	56 (44.2-68.5)	43 (32.5-59.5)	75 (56-100)	299 (170-301)	p<0.01	p<0.01
Trail B	122 (89-157)	97 (58.5-153)	225 (165-300)	301 (300-301)	p<0.01	p<0.01
Cerad Word delayed recall	6 (5-7)	5 (3-6)	3 (0.5-4)	0.5 (0-2.7)	p<0.01	p=0.05
Buschke	47.5 (46-48)	48 (47-48)	47 (45.5-48)	38.5 (16.5-44)	p=0.45	p<0.01
Boston	53 (45-56.5)	55 (51.7-57.2)	45(38-48.5)	34 (29-43.5)	p<0.01	p<0.01
Copy of Figure	10 (10-10)	10 (10-10)	10 (9-10)	8 (3-10)	p=0.43	p<0.01
Recall of Figure	10 (3-10)	10 (8-10)	4 (0-8)	0 (0-4)	p<0.01	p=0.07
Copy of intersecting pentagons	2: 100% (16)	2: 94.1% (16) 1: 5.8% (1)	2: 77.7% (21) 1: 18.5% (5) 0:3.7% (1)	2: 0% 1: 29.4% (5) 0: 70.5% (12)	p=0.33	P<0.01

Data are expressed as median (interquartile range)

No differences between PDCN and control subjects were found for any test. All comparisons between PDD and PDCN and between PDD and control subjects showed significant differences (p<0.01 or p<0.001)

PDCN= cognitively normal PD patients, PD-MCI= PD patients with mild cognitive impairment; PDD= PD patients with dementia

ORIGINAL ARTICLE

Posterior parietooccipital hypometabolism may differentiate mild cognitive impairment from dementia in Parkinson's disease

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Abstract

Purpose Patients with Parkinson's disease (PD) may have normal cognition, mild cognitive impairment (MCI) or dementia. We investigated differences in cerebral metabolism associated with these three cognitive states and the relationship between metabolism and cognitive dysfunction.

Methods FDG PET and a battery of neuropsychological tests were used to study PD patients with dementia (n=19), MCI (n=28) and normal cognition (n=21), and control subjects (n=20). Regional glucose metabolism in patients and controls was analysed using statistical parametric mapping (SPM8) corrected for age, motor severity and depression. Correlations between the mini-mental state examination score and Z-score values of the different cognitive domains with respect to cerebral FDG uptake were assessed using SPM8.

David Garcia-Garcia and Pedro Clavero contributed equally to this work

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Results PD patients with MCI (PD-MCI patients) exhibited decreased FDG uptake in the frontal lobe, and to a lesser extent in parietal areas compared with cognitively normal patients. Patients with dementia showed reduced metabolism in the parietal, occipital and temporal areas and a less extensive reduction in the frontal lobe compared with PD-MCI patients, while widespread hypometabolism was seen in comparison with patients with normal cognition. PD-MCI patients exhibited reduced FDG uptake in the parietal and occipital lobes and in localized areas of the frontal and temporal lobes compared with controls, whereas patients with dementia showed a widespread reduction of cortical metabolism. Mini-mental state examination score correlated positively with metabolism in several lobes, executive function with metabolism in the parietooccipitotemporal junction and frontal lobe, memory with temporoparietal metabolism,

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visuospatial function with occipitoparietal and temporal metabolism, and language with frontal metabolism.

Conclusion PD patients with MCI exhibited hypometabolism in several cortical regions compared with controls, and in the frontal and parietal regions compared with cognitively normal patients. Hypometabolism was higher in patients with dementia than in those with MCI, mainly in the posterior cortical areas where it was correlated with visuospatial, memory and executive functions.

Keywords Parkinson's disease · Mild cognitive impairment · PET · Cerebral metabolism · Dementia

Introduction

Cognitive impairment is a frequent comorbidity in Parkinson's disease (PD), with a reported dementia prevalence of up to 80 % in long-term longitudinal studies [1, 2]. Mild cognitive impairment (MCI) is defined as a cognitive decline that is not normal for age but in which essentially normal functional activities can be maintained [3-6]. This condition is also common in PD and is considered a risk factor for the development of dementia [7]. As yet, the pattern of progression of the cognitive decline from MCI to dementia in PD patients has not been well defined, and longitudinal studies addressing the neuropsychological predictors of dementia in PD have yielded inconsistent results [6–9]. However, a longitudinal study on early PD concluded that patients with deficits in tasks with a more temporal and parietal lobe involvement ("posterior cortical" dysfunction) have a higher risk of developing dementia [10]. Similar results were found in a cross-sectional study assessing the cognitive changes characterizing the transition from MCI to dementia in PD [11]. In keeping with this, a recent longitudinal study involving FDG PET showed that patients who develop dementia have reduced baseline FDG uptake in the visual association area and posterior cingulate cortex [12].

Cross-sectional studies with FDG PET have revealed that dementia is associated with widespread areas of cortical hypometabolism [13–19], while in PD patients with MCI (PD-MCI patients), hypometabolism appears to be more localized to the temporoparietooccipital junction and the frontal cortex [18–20] compared with healthy controls. In addition, PD-MCI patients show reduced FDG uptake in the frontal and parietal regions with respect to cognitively normal PD (PDCN) patients [19, 21]. However, the metabolic changes that distinguish PD-MCI patients from PD patients with dementia (PDD) have not been studied as yet.

We hypothesized that PDD patients would have greater hypometabolism in posterior cerebral areas than PD-MCI patients. Here, we describe patterns of cerebral metabolism in PD-MCI patients compared with PDD patients and with PDCN patients. Our aim was to identify metabolic differences between the cognitive states in PD, specifically between dementia and MCI. We also report the correlations between cerebral metabolism and cognitive status in specific cognitive domains.

Material and methods

Subjects

A cross-sectional study was conducted in patients with PD diagnosed according to the UK Parkinson's Disease Society Brain Bank criteria [22] who were consecutively recruited from the Movement Disorders Unit of the Clinica Universidad de Navarra. Patients over 60 years of age and with a disease duration of at least 10 years were included, as this profile best represents the PD population with the highest risk of cognitive decline [23]. Exclusion criteria were other brain disorders, abnormal findings on MRI (i.e. tumour, hydrocephalus or severe vascular lesions), severe systemic disease, major psychiatric illness, prior cerebral surgery, abnormalities in thyroid function, positive VDRL test and low levels of vitamin B12 or folic acid. Healthy controls were recruited from among members of the Association of Blood Donors of Navarra (Spain). Controls with any history of neurological, psychiatric or major medical illness, memory complaints, scores below normal in the neuropsychological assessment or with MRI abnormalities were ruled out. The Ethics Committee for Medical Research of the University of Navarra approved the study, and all patients, or their legal representatives, and controls provided informed consent to participate in the study.

Motor assessments

The motor state in PD patients was assessed using the Hoehn and Yahr scale and the motor section of the unified Parkinson's disease rating scale (UPDRS-III) in the "off" (minimum of 12 h without anti-parkinsonian medication) and "on" states. Drug intake was recorded and dopaminergic treatment calculated in levodopa equivalents (Table 1).

Neuropsychological assessment

Global cognitive function was evaluated with the mini-mental state examination (MMSE) [24]. The Interview for Deterioration in Daily Living in Dementia (IDDD) scale [25] was used to assess functional independence. Depression was rated using the Geriatric Depression Rating Scale (GDS) of Yesavage et al. [26]. Different cognitive domains (verbal and visual memory, attention and executive function, language and visuospatial function) were evaluated using a battery of neuropsychological tests [27]. Memory was assessed using the Free and Cue Selective Reminding test of Buschke [28], the Cerad word list, and the delayed recall of two simple figures (Massachusetts General



Table 1 General features of the study groups

	Control (n=20)	PD (<i>n</i> =68)	PDCN (<i>n</i> =21)	PD-MCI (<i>n</i> =28)	PDD (<i>n</i> =19)
Age (years), mean (SD)	67.9 (3.1)	70.6 (6.4)	67 (7.1)	71.5 (3.8) ^b	73.1 (7.1) ^{a,b}
Male gender, n (%)	11 (55)	37(54.4)	15 (71.4)	14 (50)	8 (42.1)
Disease evolution (years)	_	13,6 (5.1)	12.4 (3.8)	14.1 (6)	14.3 (5.1)
UPDRS III "on", mean (SD)	_	20.8 (10.6)	16.4 (7.1)	17.7 (9.1)	30.8 (10.2) c,e
UPDRS III "off", mean (SD)	_	37.9 (12.4)	32.3 (8.4)	33.2 (13.3)	49.4 (10.3) ^{b,d}
Levodopa equivalents (mg/day), mean (SD)	_	1147 (585.7)	1062 (347.2)	1249 (700.8)	1088 (616.5)
GDS score, mean (SD)	4.4 (4.1)	9.9 (5.2) ^a	7.8 (5.2)	9.9 (4.9) ^a	$12.8 (5.9)^{a,b}$
Hallucinations, n (%)	_	18 (26.5)	2 (9.5)	5 (17.8)	11 (57.9) ^{c,e}
Hoehn and Yahr scale score, mean (SD)	_	3 (0.8)	2.6 (0.6)	2.9 (0.7)	3.7 (0.7) c,e
Education (years), mean (SD)	9.8 (3)	10.2 (3.2)	11.7 (3.6)	9.9 (3.1)	9 (2.3)

 $^{^{\}rm a}p$ <0.001 vs. control group

Hospital, Boston). Other tests used were the Raven's Progressive Matrices, semantic (animals) and phonetic (words starting with "p") verbal fluency [29], Trail Making Test parts A and B, the Stroop test and Digit Span Forward and Backwards task for attention and executive functions. The Boston naming test and verbal fluency were evaluated for language, and the copying of two simple figures and the two intersecting pentagons of the MMSE were used for testing visuospatial function. All tests were applied by two members of the team to control subjects and patients under treatment, and were used alongside the diagnostic criteria to diagnose PD patients as being cognitively normal, as having MCI or as having dementia.

Criteria for diagnosing cognitive status

The clinical diagnostic criteria for dementia in PD [30] were applied to diagnose dementia in the present study. MCI was diagnosed in nondemented patients when the following two features were present: (1) cognitive decline was reported by either the patient or informant, or observed by the neurologist, but the decline did not interfere significantly with the functional independence of the patient; (2) the patient scored more than 1.5 standard deviations below control values in at least two tests in the neuropsychological battery, either within a single cognitive domain or across different cognitive domains [31]. Values used to determine test score deviations in PD patients were taken from a sample of 20 age- and education-matched healthy control subjects. Individual neuropsychological test scores were transformed into Zscores using the mean and standard deviation of the control sample according to the following formula: (test score - median score from control sample)/standard deviation from control sample. Single-domain PD-MCI was diagnosed when abnormalities (the two abnormal tests) were present in a single cognitive domain. Multiple-domain PD-MCI was diagnosed when abnormalities were present in at least one test in two or more cognitive domains. In addition, to correlate the cognitive state with FDG uptake, the Z-score for the different domains was calculated from the average of the Z-scores of the tests assessing each domain. Patients not fulfilling criteria for MCI or dementia were considered to have cognitively normal PD.

FDG PET

Image data acquisition

Patients were studied in the "on" pharmacological condition (i.e. under the effect of their usual anti-parkinsonian dopaminergic medication). Central nervous system depressant drugs such as benzodiazepines, neuroleptics or antidepressive treatments were withdrawn according to their pharmacological kinetics. Additionally, subjects fasted overnight before PET scanning. Before injection of the radiopharmaceutical, blood glucose was checked and was <120 mg/dL in all patients. After a few minutes of rest in silence and with dimmed lighting, ¹⁸F-FDG (370 MBq) was injected intravenously, and subjects were required to rest for 40 min in the supine position on the PET scanner bed with their eyes closed. Then, 74 planes (128×128 matrix) were acquired with a voxel size of 2.06×2.06×2.06 mm during a 20-min scan using a Siemens ECAT EXAT HR+ scanner (Siemens, Knoxville, TN). A transmission scan in 3D mode for attenuation correction was performed at the end of the acquisition



 $^{^{\}rm b} p < 0.05 \text{ vs. PDCN}$

^c p<0.001 vs. PDCN

 $^{^{\}rm d}p$ <0.05 vs. PD-MCI

e p<0.001 vs. PD-MCI

period [32]. Images were reconstructed by means of a filtered back-projection method using ECAT software (version 7.2; Siemens).

Data analysis

Data were processed using statistical parametric mapping (SPM8) software (Wellcome Department of Neurology, London, UK) implemented in Matlab 7.13 (MathWorks Inc. Sherborn, MA). First, we created a customized FDG PET template using data from the control sample (n=20). For this purpose, all control subjects were scanned with a 1.5-T Siemens Symphony system using a three-dimensional T1weighted gradient-echo sequence (acquisition parameters: coronal acquisition, TR/TE/TI 1,900/3.36/1,100 ms, flip angle 15°, 144 slices, FOV 187×250 mm, matrix 192×256, voxel size $0.98 \times 1.6 \times 0.98$ mm). Thus, control FDG PET images were coregistered with their corresponding MR images. MR images were segmented using the SPM8 segmentation tool [33] in MATLAB 7.0. Grey matter (GM) and white matter templates were generated from the entire image dataset using the DARTEL technique [34]. After an initial affine registration of the GM DARTEL templates to the tissue probability maps in Montreal Neurological Institute (MNI) space [35], nonlinear warping of the GM images was performed to normalize them onto the MNI space. The spatial normalization parameters of each MR image were then applied to each corresponding coregistered FDG PET image. The FDG PET template was obtained by averaging the spatially normalized PET images and smoothing using an isotropic gaussian filter with a full-width at half-maximum of 8 mm.

All FDG PET images were spatially normalized into a standard stereotactic MNI space using the customized FDG template. For every spatially normalized PET image, voxel values were normalized to pons activity (becquerels per centimetre cubed) using the pons volume of interest (Nifti format) from WFU PickAtlas v3.0 [12, 36-38]. Finally, the resulting PET scans were smoothed with an isotropic gaussian filter with a full-width at half-maximum of 8 mm. Changes in metabolism were assessed by analysis of the preprocessed images using one-way analysis of variance. Age and GDS score were included as covariates for the metabolism comparison between controls and patients, while for the metabolism comparison between the different groups of patients, age, UPDRS-III and GDS scores were included as covariates. Significance was set at p < 0.05 and corrected for multiple comparisons, i.e. a false discovery rate (FDR) with a cluster size of >20 voxels. In the comparison between PD-MCI and PDCN patients in which less significant differences would be expected, significance was set to p < 0.001 uncorrected, similar to previous works in the field [18, 19]. The correlation between the MMSE, UPDRS-

III, GDS scores and Z-scores of the different cognitive domains and glucose metabolism was assessed in PD patients using regression analysis and significance set at p < 0.001 uncorrected, with a cluster size of > 20 voxels.

The coordinates of the voxel peaks were transformed into Talairach space using the mni2tal program by Dr. M. Brett (http://imaging.mrc-cbu.cam.ac.uk/imaging/MniTalairach) and their anatomical locations were found using Talairach Daemon Client [39].

Statistics

Differences in the demographic and clinical characteristics between the PD groups and controls were analysed using Fisher's exact test in cases of categorical variables, analysis of variance with post-hoc Bonferroni's multiple comparison in cases of continuous, normally distributed variables, and the Kruskal-Wallis and Mann-Whitney U tests for continuous, nonparametric variables. The normality of the distributions of clinical and demographic variables was assessed using the Kolmogorov-Smirnov test. A value of p < 0.05 was considered to indicate statistical significance.

Results

Clinical data

The subjects included 20 controls and 68 PD patients (21 PDCN, 28 PD-MCI, and 19 PDD). The demographic and clinical characteristics of all groups are summarized in Table 1. With the exception of a higher GDS score, PD patients did not differ from control subjects. PDD patients were older than controls and PDCN patients. They also had higher GDS scores than PDCN patients, and had more severe parkinsonism (UPDRS and Hoehn and Yahr scores) and more hallucinations than PDCN and PD-MCI patients. The PD-MCI patients were older than PDCN patients, with no other differences in clinical features.

Compared with the controls and PDCN patients, PDD patients had poorer scores in all neuropsychological tests, while with respect to PD-MCI patients, they had poorer scores in all but the recall of figures and word delayed recall tests (Supplementary Table 1). PD-MCI patients in turn had lower scores than PDCN patients for all tests, with the exception of the Buschke and the copying of simple figures and intersecting pentagon tests. The cognitive domains affected in PD-MCI patients were as follows: three patients (10.7 %) had only the executive domain affected; 14 patients (50 %) had two domains affected (executive and memory in nine patients, executive and visuospatial in four patients, executive and language in one patient); six patients (21.4 %) had three domains affected (executive, memory



and language in five patients, and executive, visuospatial and memory in one patient); and five patients (17.4 %) had four domains affected. No differences were found between controls and PDCN patients (Supplementary Table 1).

Regional differences in FDG PET

Comparison between PD groups

PDD patients had extensive bilateral areas of reduced FDG uptake in the frontal, parietal, occipital and temporal lobes and in the posterior cingulate cortex compared with PDCN patients (Fig. 1A). PDD patients had a lower metabolism mainly in posterior brain areas (parietal, occipital and temporal lobes) than PD-MCI patients, and also, albeit to a lesser extent, in the right frontal lobe (Fig. 1B; Supplementary Table 2). Compared with PDCN patients, PD-MCI patients did not exhibit regions of reduced metabolism. However, using a relatively lower conservative threshold (p<0.001 uncorrected), PD-MCI patients showed hypometabolism that was mainly localized in the left frontal lobe and to a lesser extent in the left parietal lobe (Fig. 1C; Supplementary Table 2). PDCN patients did not show reduced FDG uptake in any region compared with PDD and PD-MCI patients. Likewise, PD-MCI patients did not show reduced FDG uptake in any region compared with PDD patients.

Comparison between PD groups and controls

As expected, PDD patients showed an extensive bilateral reduction in FDG uptake in the frontal, parietal, occipital and temporal lobes, in the anterior cingulate cortex, and in

the caudate nucleus compared with controls (Fig. 2A; Supplementary Table 3). In PD-MCI patients, more localized hypometabolic areas were identified in the parietal (mainly in the angular gyrus) and occipital lobes, and to a lesser extent in the frontal and temporal lobes (Fig. 2B; Supplementary Table 3). PDCN patients did not show hypometabolic areas compared with controls. No regions of reduced metabolism were identified in the control subjects compared with the PD patients.

Correlation between cerebral metabolism and cognitive state in PD patients

A positive correlation between FDG uptake and MMSE score in all PD patients was observed for uptake in the parietal, occipital, temporal and frontal lobes, and in the anterior cingulate cortex and caudate nucleus using GDS and UPDRS-III scores and age as nuisance variables (Fig. 3). In addition, there were positive correlations between the Z-score of cognitive domains and FDG uptake as follows: executive function in the parietal, frontal and occipitotemporal junction; memory with temporal and parietal regions; visuospatial function with posterior areas (occipitoparietal and temporal) uptake; and language with anterior areas mainly the frontal lobe (Fig. 4). No correlation between the GDS score and FDG uptake was observed.

Regions with hypermetabolism and clinical correlation

Compared with control subjects, PD patients exhibited increased metabolism in the putamen, thalamus and cerebellum and in the motor cortical (paracentral gyrus) areas bilaterally, but there were no differences among the PD

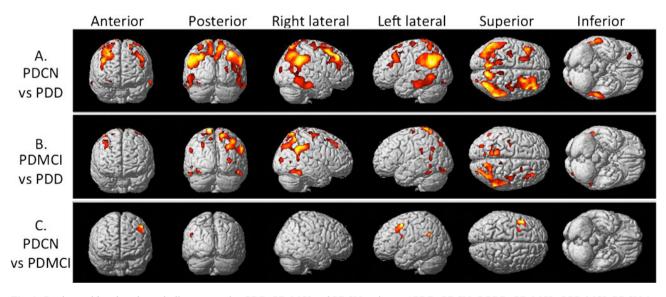


Fig. 1 Regions with reduced metabolism comparing PDD, PD-MCI and PDCN patients: A PDD<PDCN, B PDD<PD-MCI, C PD-MCI</br>
<0.05 FDR corrected for A and B; p<0.001 uncorrected for C; age, GDS and UPDRS III score as covariates in all comparisons)</p>



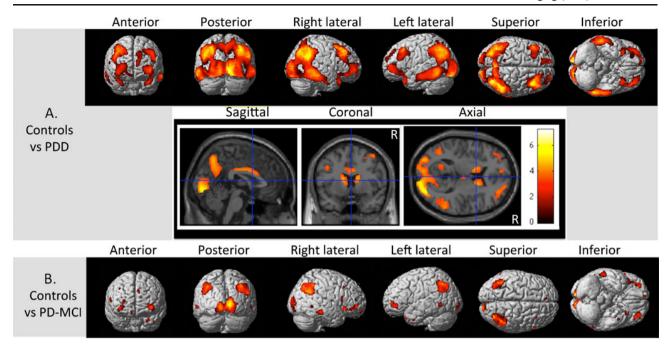


Fig. 2 Regions with reduced metabolism comparing PDD patients and PD-MCI patients with respect to control subjects: A PDD<controls, B PD-MCI<controls (p<0.05 FDR corrected; age and GDS score as covariates)

groups (Fig. 5A–C). Moreover, FDG uptake in cortical areas was positively correlated with the UPDRS-III score but there was no correlation with the MMSE score (Fig. 5D).

Discussion

We compared cerebral FDG uptake in PDCN, PD-MCI and PDD patients, and control subjects. A major finding was that with respect to PDCN patients, PD-MCI patients

showed a reduction in metabolism that predominated in the frontal lobe and to a lesser extent in the parietal lobe. In contrast, hypometabolism in PDD patients compared with PD-MCI patients was mainly located in posterior brain regions (parietal, occipital and posterior temporal areas) and to a lesser extent in the frontal lobe. We also found that, compared with controls, PDD and PD-MCI patients shared a common pattern of reduced metabolism in the parietal and occipital lobes, and to a lesser extent in the frontal and temporal lobes. However, in PDD patients the cortical

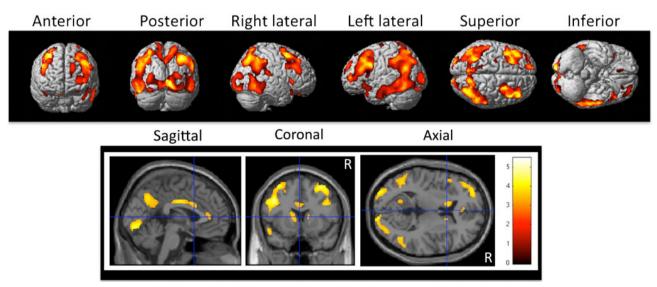


Fig. 3 Positive correlations between MMSE score and FDG uptake in all PD patients (p<0.001 uncorrected; age, GDS and UPDRS-III as covariates)



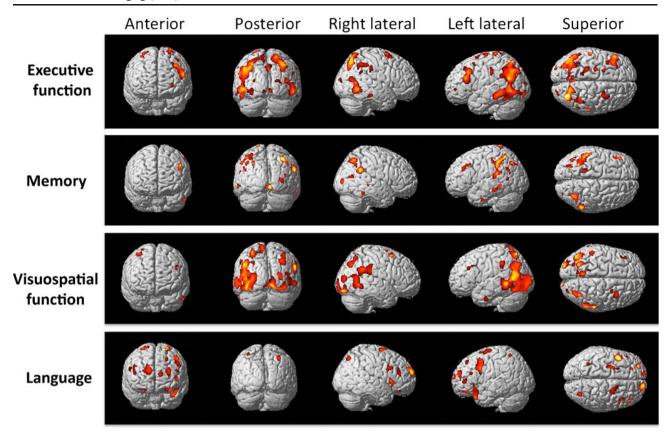


Fig. 4 Positive correlations between the Z-score of cognitive domains altered in PD patients and FDG uptake

hypometabolism was more widespread affecting wider cortical and subcortical areas compared to that seen in control subjects. Taken together, our data suggest that dementia in PD is characterized by a more intense and widespread cerebral hypometabolism than MCI in PD patients and that this hypometabolism predominates in posterior cortical areas. We also found that deficits in different cognitive domains in PD were associated with reduced cerebral metabolism involving different brain regions. Thus, our results further define aspects of cerebral metabolism associated with MCI and dementia in PD.

Most previous studies have focused on comparing the cerebral metabolism of PD patients with that of control subjects [13–17, 20], but putative distinctive features among the different cognitive states in PD have been poorly elucidated. While a reduction in FDG uptake in the posterior and frontal cortices of PD-MCI patients compared with PDCN patients has been identified in some studies [18, 19, 21], no study has been carried out to compare differences between PD-MCI and PDD patients. A cross-sectional study [11] demonstrated that dementia differs from MCI by both a generalized failure in executive function and the addition of "posterior cortical dysfunction" (naming and clock copy tests). Further to this, the Cambridge longitudinal study showed that PD patients with deficits in tasks revealing a

predominant temporal and parietal lobe ("posterior cortical") dysfunction have a higher risk of dementia than those with only a frontal executive dysfunction [10]. In keeping with this, a recent longitudinal study showed that patients who develop dementia after 3.9 years of follow-up have a low performance in delayed visual reproduction learning and a reduced FDG uptake in the visual association and posterior cingulate cortex at baseline compared to controls [12]. In addition, hypometabolism in the parietooccipitotemporal and medial temporal brain has been correlated with visuospatial and mnemonic functioning in PD patients [40]. Here we report that PDD patients have reduced FDG uptake compared with PD-MCI patients mainly in the parietal, occipital and posterior temporal areas, supporting the notion that a cognitive deficit based on posterior cortical function (i.e. visuospatial and memory) is the main difference between the two cognitive states.

We also found that PD-MCI patients exhibited a reduction in metabolism in the frontal and parietal lobes compared with PDCN patients. Previous FDG PET studies have shown similar results [19] or more extensive hypometabolism in the posterior cortex [18, 21]. The discrepancy is probably due to the different criteria used for the diagnosis of MCI. For example, when a clinical scale (the clinical dementia rating scale) for staging the severity of dementia was used



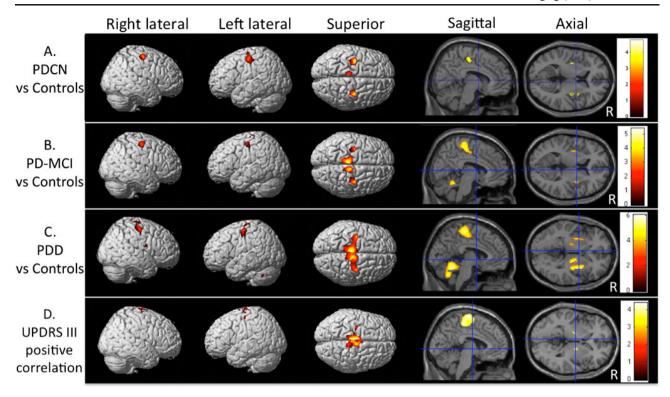


Fig. 5 Regional increases in metabolism comparing PDD, PD-MCI and PDCN patients with respect to control subjects: *A* PDCN>controls; *B* PD-MCI>controls; *C* PDD>controls (p<0.05 FDR corrected; age

and GDS score as covariates). D Positive correlation between UPDRS III score and FDG uptake (p<0.001 uncorrected)

and MCI was diagnosed for a score of 0.5, corresponding to very mild dementia, patients with MCI had more extensive hypometabolism in the posterior cortex than PDCN patients [18]. In a similar manner to Huang et al. [19], we used a more stringent diagnostic criterion based on 1.5 standard deviations in neuropsychological test scores with respect to control subjects' scores. This approach probably resulted in the classification of PD-MCI patients with lower levels of cognitive deficits. Consequently, these data also reinforce the association between more severe cognitive deficits and a higher level of posterior cortical hypometabolism.

It should be noted that the diagnostic criteria for MCI are still under development, and MCI in PD requires further definition [31]. Currently, MCI in PD includes different cognitive abnormalities depending upon the number and type of cognitive domains affected. As yet, whether a given subtype of MCI in patients with PD might confer a higher risk of developing dementia has not been clarified. A single prospective study in a small number of patients showed that single and multiple-domain non-amnestic forms of MCI were more associated with the development of dementia 4 years later [7]. Although ongoing longitudinal studies will eventually clarify this point, it is probable that PD patients with multiple-domain MCI have a more severe or advanced cognitive decline than those with single-domain forms, and therefore are at a higher risk of developing dementia. In this

sense, previous cerebral FDG PET studies did not highlight differences between PD patients with single-domain MCI and those with normal cognition. In contrast [19, 21], patients with multiple-domain MCI showed reduced metabolism in the frontal and parietal lobes, and less consistently in the temporal lobe than PDCN patients [18, 19, 21]. In the present study, all but three patients with PD-MCI had a multiple-domain type of MCI, giving more consistency to the differences found in cerebral metabolism underlying each cognitive state in patients with PD [10, 11].

We have also demonstrated a relationship between metabolic findings and cognitive state given the correlations observed between the severity of the global and cognitive domain deficits measured by MMSE and the corresponding Z-scores, respectively, and regions of reduced metabolism in PD patients after correcting for age, depression (GDS score) and motor severity (UPDRS-III). We found that executive function mainly correlated with metabolism in the parietooccipitotemporal junction and frontal lobe, while memory correlated with metabolism in the temporal and parietal regions, and visuospatial function correlated with posterior areas (occipitoparietal and temporal). In contrast, language was correlated with metabolism in anterior (mainly frontal) areas. These results are in keeping with those of previous studies in PD patients showing that bilateral hypometabolism in the frontal and parietal regions and in the parietooccipitotemporal and



medial temporal brain correlate with executive dysfunction [41–45] and visuospatial and mnemonic functioning, respectively [40]. Although partially limited by the lack of data in normal individuals, the correlations reported here also indicate that the higher posterior hypometabolism in PDD with respect to PD-MCI patients is related to a worsening of executive dysfunction and to the addition of visuospatial and memory deficits.

This was a cross-sectional study seeking to identify metabolic differences between PDD and PD-MCI patients. Considering that MCI forms part of the cognitive decline preceding the development of dementia, only large longitudinal studies will allow a better definition of clinical MCI and of the changes that characterize the transition from MCI to dementia. Our findings therefore require confirmation in prospective studies with a larger number of patients. Nevertheless, we have studied a large number of PD patients considered to be at high risk of developing dementia [23]. Indeed, it has been reported that the development of substantial abnormalities in the defined cognitive network expression in PD takes places by the end of the first decade following clinical onset [14]. Patients in our study were studied while under dopaminergic treatment, but the doses were not different between the different groups and it is known that dopaminergic drugs do not have a significant impact on the pattern of cognitive expression detected in FDG PET [14, 41]. Moreover, there were no differences in other treatments that could have interfered with the results; for example, only three PDD patients [46] were receiving treatment with cholinesterase inhibitors, which would have increased the FDG uptake [46].

The disease duration was not different among the groups, but one limitation of this study is that, due to the natural course of the disease and the age at which dementia most frequently occurs, PDD patients exhibited a greater degree of motor disability than patients in the other groups, were older on average and had higher depression scale scores than PDCN patients and controls [16, 17, 47-50]. It should be noted that the metabolic pattern related to motor aspects is different from that related to cognition [14]. In addition, we did not identify any correlation between depression score and cerebral metabolism. However, the data were corrected for age, motor severity and depression, and therefore we believe the results would not have been significantly affected by these factors. Further to this, the validity of our data is reinforced by the fact that the metabolic patterns in the PD groups studied here in comparison with control subjects are similar to those reported in the literature [13–18, 51]. Moreover, the subcortical (putamen and thalamus) and motor cortical (paracentral gyrus) hypermetabolic areas encountered in all groups of PD patients were also in keeping with the PD-related motor pattern [52, 53], and actually correlated positively with the UPDRS-III score. In addition, we used a more advanced version of the software for image analysis (i.e. SPM8) and corrected our data more thoroughly than in previous studies (FDR corrected at p < 0.05). Admittedly, as a result of the use of this conservative threshold, PD-MCI patients did not show regions of reduced metabolism compared with PDCN patients. Thus, differences between PD-MCI and PDCN patients were obtained only with the less-conservative analysis (uncorrected p < 0.001). However, the metabolic differences previously reported between these two groups of patients (PD-MCI and PDCN) have also been obtained with uncorrected data [18, 19, 21].

Conclusion

Our study demonstrated that PD-MCI patients exhibited hypometabolism (decreased FDG uptake) in numerous cerebral areas compared with controls, and in the frontal and parietal regions compared with PDCN patients. In contrast, dementia in PD was characterized by a more expansive cerebral hypometabolism than MCI, with predominance in the posterior cortical areas. The reduction in FDG uptake in these posterior areas correlated with poorer outcomes in visuospatial, memory and executive functions. Taken together, these results indicate that dementia in PD is associated with a worsening of executive dysfunction along with an impairment of visuospatial and memory function.

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Conflicts of interest Maria C. Rodriguez-Oroz is on the advisory board of UCB Spain. She has received payment for lectures, as well as travel and accommodation to attend scientific meetings from GlaxoSmithKline, UCB, Lundbeck and Medtronic. She has received research funding from national and regional government bodies in Spain. Jose Obeso has served previously on the Advisory Board of GSK (UK), and received honorarium for lectures given at meetings organized by GSK (Spain), Lundbeck-TEVA and UCB. Grants/Research: Funding from Spanish Science and Education Ministry and European Union (REPLACES). The other authors have no conflicts of interest to report concerning the research dealt with in this manuscript.

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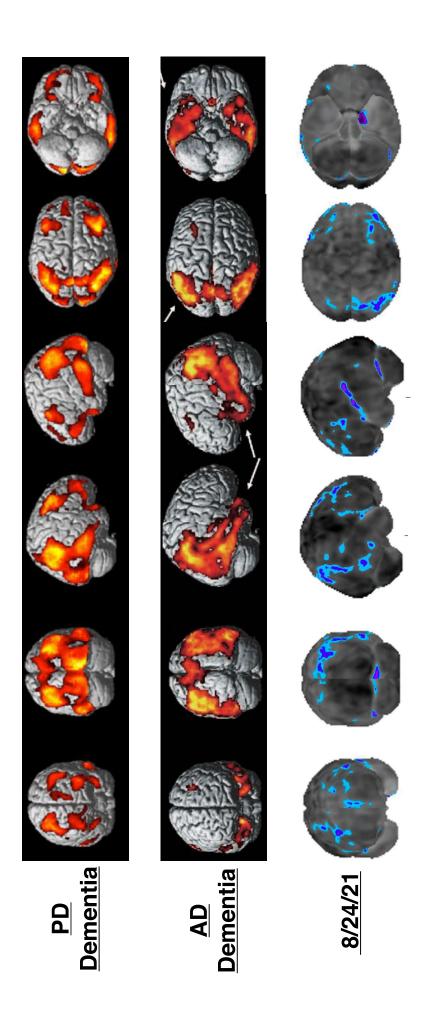
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GOVERNMENT EXHIBIT

From:

Jackson, Jim [Jim_Jackson@reyrey.com]

Sent:

4/1/2020 1:05:26 AM

To:

Barras, Tommy [Tommy_Barras@reyrey.com]

Subject:

Re: Resignation - Rob Gibbs

Tommy:

Protecting Bob and Dorothy is what all of us need to do. And we also need to protect you. Again, let me know how I can

Jim

Dr. Jim Jackson Corporate Coach, Reynolds and Reynolds 6700 Hollister Street Room 204 A Houston, TX. 77040 Jim Jackson@ReyRey.com www.JimsDailyAwakenings.com (daily email) Office (713) 718-1800; EXT. 72245 Cell (713) 377-1070

On Mar 31, 2020, at 5:38 PM, Barras, Tommy < Tommy_Barras@reyrey.com > wrote:

Thank you - you are my hero.

On side note, I am getting "fragged" by some. Bob's plan is under attack - he's starting to give in some to lessen his pain which I do not have a problem with. While his pain may be reduced - the pains passed onto me will get really ugly.

I keep reminding myself I must protect Bob and Dorothy no matter the cost to me..... I hoped the new role would be fun, good, positive. Looks like ugly gets included in the package - guess that's part of the badge.

Keep you posted. Writing you helps with frustration. Thanks for being there for me

Tommy

From: Jackson, Jim <Jim_Jackson@reyrey.com> Sent: Tuesday, March 31, 2020 5:16 PM

To: Barras, Tommy <Tommy_Barras@reyrey.com>

Subject: Re: Resignation - Rob Gibbs

Tommy;





I spent 90 minutes on the phone with Robb today. I think his head is in pretty good shape. He's not angry, with you or anyone else. He feels optimistic. He knows it's going to be a long time before he finds a job in this economy, but he's

leaned in the right direction. Let me worry about this one for you. I'm working with him and I'll continue working with him.

Two things that I especially like about Robb: (1) He's loyal. He's take a bullet for you personally. (2) He's a great team builder. He'll eventually land on his feet. But, truth be told, you may want to hire him next year to help with some special project. You can't tell right now what might come up. One thing is for sure: you wouldn't have to worry about him fragging you—which is more than can be said of everybody around you.

I'm here for you brother.

Jim

Dr. Jim Jackson
Corporate Coach, Reynolds and Reynolds
6700 Hollister Street
Room 204 A
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Jim Jackson@ReyRey.com
www.JimsDailyAwakenings.com (daily email)
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On Mar 31, 2020, at 4:03 PM, Barras, Tommy < Tommy Barras@reyrey.com> wrote:

Jim

This situation continues to trouble me. I've done many horrible things in my work life with the goal of always protecting Bob and the company. While each event caused me pains – I was able to move on and remain focus on the mission of protecting Bob.

This one is different - not sure why, I just cannot let go and move on. Becoming unhealthy

Hate not being able to visit with you at Club - cannot stand anymore Video conferences.

Lost....

Tommy

From: tommybarras@reyrey.com <tommybarras@reyrey.com>

Sent: Tuesday, March 31, 2020 3:56 PM
To: 'Gibbs, Rob' < rob gibbs@reyrey.com >
Subject: RE: Resignation - Rob Gibbs

You are a true professional – I will miss you more than I can express in writing. As this chapter ends I pray that our friendship only will gets stronger – I am not leaving you behind. I cannot stand thinking about the bridges being burnt as we separate.

Once this Virus crap ends – I hope you will join me in Colorado (every year) for some fishing, shooting, and just hanging out time......

Before May 1 – we must speak in person, if you need time I'm here. Please reach out for whatever, whenever you need assistance.

Peace my friend.

Tommy

From: Gibbs, Rob < rob gibbs@revrey.com>

Sent: Tuesday, March 31, 2020 3:09 PM

To: 'Barras, Tommy' < tommy barras@reyrey.com'>; 'Brockman, Bob' < Bob Brockman@reyrey.com'>

Subject: Resignation - Rob Gibbs

Tommy, Bob,

As Tommy and I have discussed, I am resigning my position at Reynolds & Reynolds. My last day will be Friday, May 1st, 2020.

I truly cannot thank you both enough for all I have learned and the many opportunities you've allowed me during my tenure. Reynolds is an outstanding organization – as I depart, I am proud to have been a part of our successes and eternally grateful to you both. Through your example, guidance, and leadership, I've grown professionally, as a leader, coach, and technologist. As Reynolds continues transitioning responsibilities through my departure, I will ensure I remain available, through May 1 and beyond, to help in any manner I can.

I remain your loyal friend. Please do not hesitate to contact me for anything I may be able to assist you with. I wish you both peace, health, discernment, and the highest of success both in the long term and while guiding Reynolds through the current pandemic.

Sincerely,

Rob Semper Fidelis

From:

tommy_barras@reyrey.com [tommy_barras@reyrey.com]

Sent:

11/24/2020 7:39:35 PM

To:

'Jackson, Jim' [Jim_Jackson@reyrey.com]

Subject:

RE: Robert

\$\$'s we are talking about is part of Craig retention bonus - all ExCom members has similar benefit. I'll explain more when we can chat in person

We're not talking about major \$\$'s when you take in account the agreement we have with ExCom members

Tommy

From: Jackson, Jim < Jim_Jackson@reyrey.com> Sent: Tuesday, November 24, 2020 12:27 PM To: Barras, Tommy <Tommy_Barras@reyrey.com>

Subject: Re: Robert

You spoke once of \$10m. That's a very high number to get rid of someone you don't actually want.

lim

Dr. Jim Jackson Corporate Coach, Reynolds and Reynolds 6700 Hollister Street Room 204 A Houston, TX. 77040 Jim Jackson@ReyRey.com www.JimsDailyAwakenings.com (daily email) Office (713) 718-1851 (direct number) (713) 718-1800; EXT. 72245 Cell (713) 377-1070

On Nov 24, 2020, at 12:25 PM, Jackson, Jim < Jim Jackson@reyrev.com > wrote:

If he is unreasonable, you can always fire him.

Dr. Jim Jackson Corporate Coach, Reynolds and Reynolds 6700 Hollister Street Room 204 A Houston, TX. 77040 Jim Jackson@ReyRey.com www.JimsDailyAwakenings.com (daily email) Office (713) 718-1851 (direct number) (713) 718-1800; EXT. 72245 Cell (713) 377-1070





UCSH 0230699

On Nov 24, 2020, at 9:06 AM, Barras, Tommy Tommy Barras@reyrey.com wrote:

Robert moved on quickly -- Cherry working on separation. Severance \$\$'s will be high -- Bob will not be happy -- but I need to be happy. Peace will be expensive

Tommy

----Original Message----

From: Jackson, Jim < <u>Jim Jackson@reyrey.com</u>>
Sent: Tuesday, November 24, 2020 8:44 AM
To: Barras, Tommy < <u>Tommy Barras@reyrey.com</u>>
Subject: Robert

Tommy:

I'm curious about how the "your proposal isn't going to work" meeting with Robert went yesterday.

Jim

Dr. Jim Jackson
Corporate Coach, Reynolds and Reynolds
6700 Hollister Street
Room 204 A
Houston, TX. 77040
Jim Jackson@ReyRey.com
www.JimDailyAwakenings.com (daily email) Office (713) 718-1851 (direct number)
(713) 718-1800; EXT. 72245
Cell (713) 377-1070

From:

Bales, Mark F [Mark_Bales@reyrey.com]

Sent:

2/16/2021 3:39:58 PM

To:

Barras, Tommy [Tommy_Barras@reyrey.com]
Burnett, Robert [Robert_Burnett@reyrey.com]

Subject:

RE: Global Ops Data - January

Tommy,

We do not typically work up an invoice for Bob for his portion of costs. As a 1% partner, he has already contributed capital to the company and—as long as the entity remains solvent—would not be required to pay anything additional related to normal operations. There are times in the past where both he and Reynolds have had to make additional capital contributions (most recently April 2019).

We will work on Hardwicke's 2020 federal tax return in the coming weeks and will have to provide a K-1 to Bob in the near future to report his 1% share of the results. I'm hopeful we have this ready to go by mid-March.

I want to be clear on your request below-- Do you want a summary of some type that you can use to demonstrate the typical annual costs of the Global? Will the K-1 be sufficient to show Bob's share? Or do you want something else altogether?

Thanks

Mark

Mark Bales

Finance Director

Dayton 937.823.0400 (cell)

From: Barras, Tommy <Tommy_Barras@reyrey.com>

Sent: Friday, February 12, 2021 8:28 AM
To: Bales, Mark F < Mark_Bales@reyrey.com>
Subject: FW: Global Ops Data - January

Mark

Are you working up an Invoice to Bob from Hardwicke for his portion of costs in supporting Global..?

Goal is not collect - is to show him the expenses of his 1% ownership.

Guessing 2020 does not represent true usage of aircraft. Use 2019 as baseline – or the busiest usage year (which is greatest) to demonstrate this point – Global expenses really high

Tommy

GOVERNMENT EXHIBIT

4:21-CR-009-GCH

From: Zeto, Charles < Charles Zeto@reyrey.com > Sent: Thursday, February 11, 2021 3:33 PM

To: Barras, Tommy < Tommy Barras@reyrey.com>

Cc: Uribe, Daniel < Daniel Uribe@reyrey.com >; Guthrie, Larry < Larry Guthrie@reyrey.com >; Kaufman, William K

< William Kaufman@reyrey.com >; Robinson, Sheri < Sheri Robinson@reyrey.com >; Skidmore, William R (Bill)

< William Skidmore@reyrey.com > Subject: Global Ops Data - January

RR-000010403

GOVERNMENT

Tommy,

Attached are the Global ops data for January.

Please let me know if you have any questions or concerns.

Charlie

From:

tommybarras@reyrey.com [tommybarras@reyrey.com]

Sent:

6/19/2020 10:04:11 PM

To:

Jim Jackson (jim_jackson@reyrey.com) [jim_jackson@reyrey.com]

Subject:

FW: New For Business Fact Sheet Attachments: STA Ford New Business Location.doc

Issue Robert and I are on opposites sides of fence. You did turned everyone on committee against my plan - but we moving.

Bob advised me every step of way - he predicted every step that Robert would take and how I should react. Bob called it perfectly.

End not yet decided - we are watching Robert's behavior

Tommy

From: tommybarras@reyrey.com <tommybarras@reyrey.com>

Sent: Wednesday, June 17, 2020 6:33 PM

To: 'Burnett, Robert' < Robert_Burnett@reyrey.com>

Subject: RE: New For Business Fact Sheet

Robert

Reviewed your facts sheet to ensure I understood the risks from our experts. Reviewed again again the pro's and con's, spoke with ExCom members + my advisors, and digested the feedback I received.

My decision is to install the new Ford STA business in College Station. The risks described do not change the most important fact - College Station is our future; I will protect it; I will show our College Station associates their responsibilities will increase.

As I stated at first ExCom meeting - ExCom is not a board of directors. Everyone's buys is important & always the goal; but there will be decisions made that are not supported by the majority. This is the first - hopefully not many. Only time will prove this a wise decision or not.

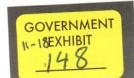
am committed to this decision; if Ford decides to back away from the deal because College Station is consider the wrong environment then the business is not worth having.

Rick + Atlanta leaderships turn their attention to planning a successful installation in College Station. Rick to inform Ford of our decision ASAP; to order equipment needed + ship to College Station; begin recruiting for the staff needed to support new business in College Station.

I'm not declaring an end to Atlanta today - migration away from Atlanta will take years. But College Station begins learning this business to give us options in the future. Atlanta's commitment to this initiative will define the pace of migration - delays or obstacles will only push us to migration sooner than later.

Acquisition merging into the core should always be the first option - this is who we are. There will be acquisition that to do not follow this game plan - ADD, IDS, Tampa but those are warts. SecureTA





would be stronger, I believe, if the business would have been consolidated years ago - no way to know for sure.

All need to get on-board quickly – planning must begin immediately. I want to see planning documents as soon as possible.

Tommy

Ps. I will communicate my decision to ExCom in the morning after giving you the evening to digest.

From: Burnett, Robert < Robert Burnett@reyrey.com>

Sent: Monday, June 15, 2020 7:08 PM
To: tommy barras@reyrey.com
Subject: New For Business Fact Sheet

Tommy:

As I committed, here is the Fact Sheet on the decision for location of new Ford business for STA.

As this is a very significant decision for Reynolds, I would expect that I should send this to the ExCom and then we should have a live discussion.

Ready to discuss when you are.

Thanks,

Robert

Robert Burnett Executive Vice President, Corporate Development The Reynolds and Reynolds Company Phone: 713-718-1418 Mobile: 713-882-0019

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From:

tommybarras@reyrey.com [tommybarras@reyrey.com]

Sent:

8/6/2020 10:20:58 PM

To:

'Jackson, Jim' [Jim_Jackson@reyrey.com]

Subject:

RE: Letter to Tommy

Jim

No ignoring you -- your suggestion are in the works. Video to Associates with me occurring now....Small meeting with Master Sergeants started but halted with recent legal distractions -- Pam will ensure I stay on schedule. Legal crap gets worse every day -- the past 10 days have introduced even more crap. It's crazy.....

Communications with ExCom is very important to me -- but Bob warns me frequently not to get into debates or allow the group to vote on topics -- that become very dangerous. Not sure I agree totally but there have been situation recently where voting would have caused wrong results.

I can I assure you Bob is involved in EVERY important decision being made. We talk about EXCom opinions and whether to allow feedback or not. These are frequent conversations.

I want to do right -- and conflicted between the old and new. Finding the balance is my greatest challenge.

I made the decision to have 7 at the table -- today I wish I would have kept the number smaller. The message would have been easier to disseminate. But I'm here -- need to figure out how to make it work.

Chasing off those not bought in will not be easy -- complexity created before my time will be hard to undo. What worries me the most is the damage done to Bob during more Legal battles. I cannot create more of these -- I'll live with the pain to protect Bob. It will work out

Keep coaching -- please

Tommy

----Original Message---From: Jackson, Jim <Jim_Jackson@reyrey.com>
Sent: Wednesday, August 5, 2020 2:11 PM
To: Barras, Tommy <Tommy_Barras@reyrey.com>
Subject: Letter to Tommy

Tommy:

Attached is a letter from me. Let me know if you have questions or if you'd like to discuss it.

Love you, man.

Jim







From:

tommy_barras@reyrey.com [tommy_barras@reyrey.com]

Sent:

2/1/2021 4:37:52 PM

To:

'Robert Burnett' [robert_burnett@reyrey.com]

Subject:

RE: Brockman Retirement Benefit

Being advised to do similar plan for Nalley - but he must retire. Not close to same yearly numbers.

Do not discuss Nalley plan with anyone

Tommy

From: Robert Burnett < robert_burnett@reyrey.com>

Sent: Monday, February 1, 2021 10:29 AM

To: tommy_barras@reyrey.com

Subject: RE: Brockman Retirement Benefit

Since this is now a known (or about to be) obligation of the company, we need to book that liability.

Our outside firm has looked at Bob and Dorothy's ages and actuarially determined how long it is anticipated that we will pay this obligation and then they calculate the present value of that to determine the liability to book.

So, it is booked as a debit to expense and a credit to this long term pension liability.

We can talk live about it more.

Robert Burnett Executive Vice President, Corporate Development The Reynolds and Reynolds Company Phone: 713-718-1418

Mobile: 713-882-0019

GOVERNMENT **EXHIBIT** 4:21-CR-009-GCH No. 150

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From: tommy_barras@reyrey.com <tommy_barras@reyrey.com>

Sent: Monday, February 1, 2021 10:15 AM

To: 'Robert Burnett' < robert burnett@reyrey.com>

Subject: RE: Brockman Retirement Benefit

Have no idea where this number comes from - would love to give Bob and Dorothy this number but that's not close to reality......

You must educate me

Tommy

From: Robert Burnett < robert burnett@reyrey.com >

Sent: Monday, February 1, 2021 9:30 AM

To: Barras, Tommy < Tommy Barras@reyrey.com > Subject: FW: Brockman Retirement Benefit

Tommy:

Please see below and attached.

We are going to take a \$150 million bit to the 2020 financials for accruing the liability for Bob's retirement.

We need to discuss this live as this is the type of thing that in the past would be adjusted and not impact Plan C or executive bonuses paid on EBITDA.

Robert

Robert Burnett Executive Vice President, Corporate Development The Reynolds and Reynolds Company Phone: 713-718-1418

Phone: 713-718-1418 Mobile: 713-882-0019

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From: Bales, Mark F < Mark Bales@reyrey.com > Sent: Sunday, January 31, 2021 9:11 AM

To: Burnett, Robert < Robert Burnett@reyrey.com>

Subject: Brockman Retirement Benefit

Robert,

We received the valuation of Bob's retirement agreement late Friday and it's coming in at just under \$150M. I wanted you to be aware since this is quite a bit above the initial \$75M - \$100M ballpark figure they gave us.

We will record this full expense in 2020 and set up a liability, which the monthly payments will go against. At the end of each year we will then have to re-adjust the remaining liability (+ or -) based on then-current NPV and mortality calculations.

Are you OK with the \$150M? We could ask Towers Watson to tweak some of the assumptions if we want to try to bring the number down some, but the fact is interest rates are so low there really isn't much of a discount given to the out years. I'm not sure how much lower they'd be able to get it.

Thanks Mark

Mark Bales Finance Director Dayton 937.823.0400 (cell)

From:

tommy_barras@reyrey.com [tommy_barras@reyrey.com]

Sent:

11/5/2020 2:53:23 PM

To:

Pam Lugo (Pam_Lugo@reyrey.com) [Pam_Lugo@reyrey.com]

Subject:

FW: My Note to Offices 2020.Nov5 Attachments: My Note to Offices 2020.Nov5.docx

Jim's version better - combine with mine.



Tommy

From: Jackson, Jim < Jim_Jackson@reyrey.com> Sent: Thursday, November 5, 2020 8:13 AM To: Barras, Tommy <Tommy_Barras@reyrey.com>

Subject: My Note to Offices 2020.Nov5

Tommy:

Here is a slightly altered version of what your wrote. I'm concerned that some of the things you wrote could be used against you—"I have many doubts what the future holds for me." Also, what you wrote requires a second email, saying who's in charge.

Jim

Dr. Jim Jackson Corporate Coach, Reynolds and Reynolds 6700 Hollister Street Room 204 A Houston, TX. 77040 Jim Jackson@ReyRey.com www.JimDailyAwakenings.com (daily email) Office (713) 718-1851 (direct number) (713) 718-1800; EXT. 72245 Cell (713) 377-1070

> GOVERNMENT **EXHIBIT**

4:21-CR-009-GCH No. 151



Today is a sad day for our Company. It is one of the saddest days of my life personally.

Today Bob Brockman will retire as C.E.O of Reymolds and Reynolds and from its Board of Directors. He will be taking medical disability. I cannot put into words the pain it gives me to deliver this message to you, my fellow Officers of Reynolds and Reynolds.

Bob Brockman worked tirelessly for 50 years to create the great company Reynolds and Reynolds is today. Along the way, he formed dozens of great auxiliary companies.

Bob was the greatest leader any of us will ever know. His wisdom and work ethic set the highest possible standard for us. But just as important, he was our mentor, supporter, and friend—almost a father figure. As a result, each of us strove to be productive and to do the quality of work that pleased him.

Today I am to be named Bob's successor. It is a role that I never sought but will do my best to fulfill. I am not Bob Brockman – not even close. But I use the skills Bob taught me to lead the company into the bright future it deserves. I will give my all to make Bob proud of me.

I challenge you to join me in making Reynolds and Reynolds the legacy Bob Brockman deserves. Because of the pandemic, the divided political climate, and other factors, these are challenging times. Let's decide now to move forward with even more determination to make the heritage Bob left us even greater.

We will never forget Bob Brockman - his vision, drive, care, and leadership. And the best way to honor him is by using the skills he taught us to make Reynolds and Reynolds an even greater company.

Tommy Barras

From:

tommy_barras@reyrey.com [tommy_barras@reyrey.com]

Sent:

12/24/2020 10:29:21 PM

To:

Lisa Barras (barraslisa@earthlink.net) [barraslisa@earthlink.net]

Subject:

FW: Folks have been fighting about Jesus since the beginning! Merry Christmas!

Attachments: Trouble In The Manger 748BEE2C-C654-4159-8601-A64A036D92B0.mov

From: Jackson, Jim < Jim_Jackson@reyrey.com> Sent: Thursday, December 24, 2020 3:06 PM

To: Barras, Tommy <Tommy_Barras@reyrey.com>; Lugo, Pam <Pam_Lugo@reyrey.com>; Dorothy Kay Brockman <dorothyhbrockman@outlook.com>; Brockman, Bob <Bob_Brockman@reyrey.com>; Robert & Elizabeth Brockman

<Robert@firehead.org>; Elizabeth Bellows Brockman <ebellows@gmail.com>

Subject: Folks have been fighting about Jesus since the beginning! Merry Christmas!

Dr. Jim Jackson Corporate Coach, Reynolds and Reynolds 6700 Hollister Street Room 204 A Houston, TX. 77040 Jim Jackson@ReyRey.com www.JimsDailyAwakenings.com (daily email) Office (713) 718-1851 (direct number) (713) 718-1800; EXT. 72245 Cell (713) 377-1070

From:

tommy_barras@reyrey.com [tommy_barras@reyrey.com]

Sent:

10/23/2021 1:53:54 PM

To:

Lisa Barras (barraslisa@earthlink.net) [barraslisa@earthlink.net]

Subject:

FW: Great doc for back pain

Comments from the CEO of Methodist on the Dr recommended by Finnila

Tommy

From: Steve Stephens < Steve. Stephens@amegybank.com>

Sent: Friday, October 22, 2021 7:50 PM

To: tommy_barras@reyrey.com; Jim Jackson <jim_jackson@reyrey.com>

Subject: Re: Great doc for back pain

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From Marc Boom

He is amazing! Cannot go wrong with him. He is in a private group, but he is amazing!

Get Outlook for iOS

From: Steve Stephens <Steve.Stephens@amegybank.com>

Sent: Friday, October 22, 2021 4:12:09 PM

To: tommy barras@reyrey.com <tommy barras@reyrey.com>; Jim Jackson <jim_jackson@reyrey.com>

Subject: Re: Great doc for back pain

I will check with Marc Boom and make sure he is the best. Stand by.

Get Outlook for iOS

From: tommy barras@reyrey.com <tommy barras@reyrey.com>

Sent: Friday, October 22, 2021 4:07:15 PM

To: Steve Stephens <Steve.Stephens@amegybank.com>; Jim Jackson <jim jackson@reyrey.com>

Subject: RE: Great doc for back pain

D EXTERNAL EMAIL! Inspect contents carefully.

Steve, Jim

You heard of Neuro Surgeon (looks like I need back surgery) at Methodist - Dr. Andrew Roeser ..?

https://www.neurosurgery-texas.com/physicians/andrew-c-roeser-md/

Tommy

From: Steve Stephens < Steve. Stephens@amegybank.com >

Sent: Wednesday, October 20, 2021 9:20 AM

To: Tommy Barras (tommy barras@reyrey.com) <tommy barras@reyrey.com>

Subject: Great doc for back pain

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From:

tommybarras@reyrey.com [tommybarras@reyrey.com]

Sent:

8/1/2020 5:18:06 PM

To:

Keith Hill (Keith_Hill@ReyRey.com) [Keith_Hill@ReyRey.com]

Subject:

FW: The Implications of Working Without an Office

Forward to the group....

From: Keith Hill <keith_hill@reyrey.com>
Sent: Saturday, August 1, 2020 12:00 PM
To: 'Jackson, Jim' <Jim_Jackson@reyrey.com>
Cc: 'Barras, Tommy' <Tommy_Barras@reyrey.com>

Subject: RE: The Implications of Working Without an Office

Jim

Thank you for sending this. I think this was a valuable read. It isn't a complete study (but it admits this). It does, however bring forth some ideas we need to consider.

Tommy - I think this could be good reading for ExCom.

Keith Hill 281-380-9574

From: Jackson, Jim [mailto:Jim Jackson@reyrey.com]

Sent: Saturday, August 1, 2020 8:34 AM To: Hill, Keith <a href="https://keith.com/keit

Cc: Barras, Tommy < Tommy Barras@reyrey.com > Subject: The Implications of Working Without an Office

Keith:

Thought you might want to read this.

Jim

https://hbr.org/2020/07/the-implications-of-working-without-an-office

From:

tommybarras@reyrey.com [tommybarras@reyrey.com]

Sent:

9/7/2020 8:14:10 PM

To:

'Keith Hill' [keith_hill@reyrey.com]

Subject:

RE: Hey

Understand.....others in our world will suffer with this disease so best learn how to deal with

Tommy

From: Keith Hill <keith_hill@reyrey.com> Sent: Monday, September 7, 2020 3:08 PM

To: tommybarras@reyrey.com; 'Jackson, Jim' < Jim_Jackson@reyrey.com>

Subject: RE: Hey

He is still struggling with the tremors and being around people. In some ways, he has withdrawn. It may help to have Jim reach out as well. Mike is a private person, but we all need that.

Keith Hill 281-380-9574

From: tommybarras@reyrey.com [mailto:tommybarras@reyrey.com]

Sent: Monday, September 7, 2020 3:03 PM

To: Keith Hill < Keith Hill@ReyRey.com >; Jim Jackson < jim jackson@reyrey.com >

Subject: FW: Hey

FYI....

From: Mike Behm < michaelbehm99@gmail.com > Sent: Monday, September 7, 2020 2:48 PM

To: tommy barras@reyrey.com

Subject: Re: Hey

Tommy

Thank you, that means SO much. With all you have on your plate right now, it truly means the world to me!

Keep the prayers coming!!

Highest regards!

Mike

On Mon, Sep 7, 2020 at 1:21 PM < tommy barras@reyrey.com > wrote:

Mike

Just wanted to say hello – check in on you. Hope retirement has reduce stress; reduce pains; provided you and family peace.

I pray for you my friend.

Tommy

Mike Behm

```
From:
```

tommybarras@reyrey.com [tommybarras@reyrey.com]

Sent:

10/23/2020 10:17:56 PM

To:

Pam Lugo (Pam_Lugo@reyrey.com) [Pam_Lugo@reyrey.com]

Subject:

FW: Executive Chief of Staff

```
Jim loves you....LOTS
Tommy
----Original Message----
From: Jackson, Jim <Jim_Jackson@reyrey.com>
Sent: Friday, October 23, 2020 3:48 PM
To: Barras, Tommy <Tommy_Barras@reyrey.com>
Subject: Re: Executive Chief of Staff
Makes my day!
Dr. Jim Jackson
Corporate Coach, Reynolds and Reynolds
6700 Hollister Street
Room 204 A
Houston, TX. 77040
Jim_Jackson@ReyRey.com
www.JimDailyAwakenings.com (daily email) Office (713) 718-1851 (direct number)
                 (713) 718-1800; EXT. 72245
cell (713) 377-1070
> On Oct 23, 2020, at 2:53 PM, Barras, Tommy <Tommy_Barras@reyrey.com> wrote:
> ----Original Message----
> From: Bob Brockman <Bob_Brockman@reyrey.com>
> Sent: Friday, October 23, 2020 2:07 PM
> To: Tommy Barras <Tommy_Barras@reyrey.com>; Rob Nalley
> <rob_nalley@reyrey.com>; Robert Burnett <Robert_Burnett@reyrey.com>; > Willie Daughters <willie_daughters@reyrey.com>; Eric Edwards > <eric_edwards@reyrey.com>; Keith Hill <Keith_Hill@reyrey.com>; Scott
> Santana <Scott_Santana@ReyRey.com>; Chris Walsh
> <Christopher_Walsh@reyrey.com>; Pam Lugo <pam_lugo@reyrey.com>; Craig
> Moss <Craig_Moss@reyrey.com>
> Subject: Executive Chief of Staff
> Pam Lugo's title is now Executive Chief of Staff to President and COO Tommy Barras. She must attend all EXCom meetings in their entirety.
> Bob
```



From: Jackson, Jim <Jim_Jackson@reyrey.com> Sent: Thursday, December 3, 2020 1:37 PM To: Barras, Tommy <Tommy_Barras@reyrey.com> Subject: Two IRS Agents

Tommy:

Two IRS agents, Ryan D. Rickey and Evan Garrett, showed up at my door unannounced this morning. I did not allow them into my house because of Susan's coronavirus (actually I am out of quarantine today), but we talked via cell phone for about 40 minutes. After the conversation I called Tim Johnson and went over the conversation with him. They mainly wanted to know about how the Reynolds handover took place—who named you CEO, who put me on the Board, what happened to Nalley and Deaton. I was purposefully evasive and uncertain. They also wanted copies of the documents we signed at Bob's house. I referred them to Tim. I did a good job of answering their questions without over-answering. I certainly said nothing that could have deepened Bob's problems and added problems for you. They wanted to know why Bob named you you CEO. I gave them a good answer. And I told them that when I found out the Trust owned the company, I asked you about it and you said, "I know nothing about the Trust, I don't want to know and you don't need to know." I told them that was good enough for me. They wanted to know how the Board would function and whether others members would be added. I told them we would soon formally organize and keep minutes and that I was sure other Board members would be added in time.

I volunteered that Bob Brockman worked 90 hours a week for years—that he handled Reynolds business details that no other CEO in America would touch. And I would never believe that he had time to I do all the things he was accused of doing. I thought he had been set up by people who used him and then turned states evidence against him to save their own skin. I don't think I sold them, but they at least listened.

That's about it.

All in all, it was relaxed, and went well.

Jim

GOVERNMENT EXHIBIT 4:21-CR-009-GCH No. 152





Brockman, Robert T MRN: 003768603, DOB: 1941

1941, Sex: M

Patient

Demographics

Name: Robert T Brockman

Address: HOUSTON TX 77027

Date of birth: 1941 Ethnicity: Not Hispanic or Latino

Home phone: 713-680-9635

Sex: Male Race: Caucasian

Work phone: 917-576-2721

Gender identity: Male

Email: BOB_BROCKMAN@REYREY.COM

Mobile: 713-412-9916

Relationships

Name Relation to Patient Phone Number

Brockman, dorothy Spouse Mobile: 713-516-1270 (primary)

Home: 713-516-1270

Immunizations

No documentation.

Advance Care Planning

Plan

Patient Capacity

The patient has full capacity. There is no history of patient status change.

Current Code Status

Date Active	Code Status Order ID	Comments	User	Context
Not on file				

Health Care Agents

There are no Health Care Agents on file.

Patient Contacts

Patient Contacts

Name	Relationship	Phone	Roles	
Brockman, dorothy	Spouse	713-516-1270		

GOVERNMENT EXHIBIT

4:21-CR-009-GCH

No. 156



Brockman, Robert T MRN: 003768603, DOB: 1941, Sex: M

Patient (continued)

Patient Level Scans

Notice of Privacy Practice

Electronic signature on 2/2/2021 9:14 AM (effective from 2/2/2021 expires 1/31/2027) - E-signed



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Patient (continued)

Patient Level Scans (continued)

HOUSTON METHODIST JOINT NOTICE OF PRIVACY PRACTICES ACKNOWLEDGMENT

You have been given the Notice of Privacy Practices for Houston Methodist. This Notice describes your legal rights regarding your health information and will inform you of the legal duties and privacy practices of Houston Methodist with respect to health information created for services generated at Houston Methodist. If you receive services by your physician or other health care provider at a different location, you may want to ask about that office or clinic's health information privacy policies and notices because they could be different.

Houston Methodist organizations and their medical staffs participate in an Organized Health Care Arrangement under Health Insurance Portability and Accountability Act (HIPAA) for the purpose of sharing protected health information for treatment, payment, and health care operations and are providing this Notice of Privacy Practices in one document for your convenience. Houston Methodist hospitals and their respective Medical Staff members are independently responsible for complying with this Notice.

Your name and signature below indicate that you have been provided with a copy of this Notice of Privacy Practices. If you have declined a copy of this Notice, please initial here and sign below:

If you have a question regarding any of the information set forth in this Notice of Privacy Practices, please do not hesitate to call the Business Practices Officer at the location of interest or 713-383-5129.

Patient Name: Robert T Brockm	,	
		<u>February 2, 2021</u> Date
Loroth Bro	Oman	
Signature of Patient or Patient's Quality	re captured by Brockman, Robert T ified Personal Representative	
Printed Name of Qualified Person	al Representative:	
Legal Authority to Act on Behalf	of the Patient:	
	rical patient, this signed acknowle ot of the Notice of Privacy Practice	edgment for receipt of the Notice of Privacy es on behalf of the newborn(s).
		es on behalf of the newborn(s).
Practices also serves as receip	ot of the Notice of Privacy Practice	es on behalf of the newborn(s).
Practices also serves as receiptions and a serves as receiptions are receiptions as receiptions and a serves as receiptions are receiptions as receiptions as receiptions and a serves as receiptions are receiptions recei	ot of the Notice of Privacy Practice For Staff Use O	es on behalf of the newborn(s).



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Patient (continued)

Patient Level Scans (continued)



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Patient (continued)

Patient Level Scans (continued)

PO - Consent for Treatment

Electronic signature on 2/2/2021 9:15 AM (effective from 2/2/2021 expires 2/1/2022) - 1 of 10 e-signatures recorded



Brockman, Robert T MRN: 003768603, DOB: 1941, Sex: M

Patient (continued)

Patient Level Scans (continued)

Houston Methodist Leading Medicine

CONSENT FOR MEDICAL TREATMENT & FINANCIAL RESPONSIBILITY

Consent to Medical Care

I, Robert T Brockman, knowing that I have a condition requiring medical care, voluntarily consent to routine hospital inpatient, hospital outpatient, and/or physician clinic care including nursing care, diagnostic procedures, evaluation, testing and medical treatment as ordered or directed by my physicians.

Consent to Treatment in an Educational Institution

Houston Methodist is an educational institution where, among those who attend patients are medical, nursing, and other health care personnel in training. Trainees may be present during care, may provide some care under appropriate supervision (unless ordered otherwise by the responsible physician), and may discuss my case in educational settings, always in compliance with Houston Methodist's policies protecting patient confidentiality. In addition, still or motion pictures, audio recordings, closed circuit television monitoring, and other images may be taken in the course of my treatment and care at Houston Methodist and may be used for educational purposes and in compliance with Houston Methodist's policies protecting patient confidentiality.

Consent to Use of Photography/Video/Recording for Treatment Purposes

Houston Methodist may utilize photography or video recording in the course of care for the purpose of patient treatment. If my physician or members of the care team take photographs or video recordings during the course of my treatment, I understand that those images will be stored as a part of my Houston Methodist medical record in accordance with Houston Methodist's policies protecting patient confidentiality.

In addition, I understand that my physician or other members of the care team may record conversations I have with him/her regarding my condition and possible treatments. This recording will be automatically summarized and put into notes for my physician or health care provider to review. Once summarized and approved by my physician or other health care provider, the recording will be erased and the summary notes will be stored in the Houston Methodist medical record. I have the right to ask my physician or care provider to not record all or part of any particular conversation. If I have visitors or family members in the room during a recorded conversation, I understand they may be recorded also.

Agreement to Pay

I agree to pay all charges resulting from services rendered by Houston Methodist as requested by me personally, by any guarantor or any attending physician(s) in accordance with the rates set out in the Hospital's Master Charge List and/or by Houston Methodist physician clinics, including any balance due for services not covered by any third party payor. If I am receiving care at a Houston Methodist physician office, I understand that all charges for services not covered by verified healthcare coverage are due and payable upon discharge or conclusion of a physician clinic visit in accordance with bills and invoices presented. If I am receiving inpatient care at a Houston Methodist Hospital, I agree that I am responsible for payment of all charges incurred after Houston Methodist or my third party payor informs me that inpatient care is no longer required should I decide to remain in the hospital. If my third party payor determines that I obtained unapproved services in an inappropriate setting, I will be responsible for payment of such charges. I am responsible for all charges incurred prior to informing Houston Methodist of my third party coverage. Provisional credit may be allowed for confirmed healthcare coverage benefits when assigned to Houston Methodist. All such credits are subject to collection by Houston Methodist unless coverage is subsequently denied in whole or in part.

In addition, I understand Houston Methodist may hire a third party to assist Houston Methodist in collecting payment from me. Both Houston Methodist and its third party contractor may contact me in writing or by calling me. Any calls will be made to the primary phone number Houston Methodist has on file for me. I understand that my primary number on file with Houston Methodist may be my cell phone number. In such case, I hereby expressly authorize Houston Methodist or any of its third party contractors to call my cell phone for billing and/or collection matters and that such calls may include automated calls.

I further agree that Houston Methodist and its third party vendors may call or text my cell phone with automated or recorded appointment reminders, preventive care services reminders, and post-discharge care communications. I may opt out of automated calls and text messages at any time. Consenting to automated calls and text messages regarding appointment reminders, preventive care services, and post-discharge care communications is not a requirement for receiving healthcare services from Houston Methodist.

Guarantor's Obligation

I, the undersigned Guarantor below, agree to guarantee payment and collection of all charges incurred by Patient. If Patient is unable to execute this document for any reason, I assume primary responsibility for payment of all charges incurred by Patient.



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Patient (continued)

Patient Level Scans (continued)

Valuables Reminder

I understand that valuables and personal items I keep in my possession while at Houston Methodist may be at risk for loss or damage. Houston Methodist does not assume responsibility for personal property, including, but not limited to, jewelry, dentures, hearing aids, glasses, clothing, money, credit/debit cards, and cell phones. I have been encouraged to leave valuables at home or, if admitted to the hospital, deposit them in the hospital safe.

Prescription Drugs

I understand that Houston Methodist may utilize electronic prescription software in the event that medications are prescribed in the course of my treatment. I consent to use of this software to generate a history of medications previously prescribed to me which were billed to a third party payor.

Health Information Exchange (HIE)

We may make your health information available electronically through an information exchange network to other providers involved in your care who request your electronic health information. The purpose of this information exchange is to support the delivery of safer, better coordinated patient care. Participation in the information exchange is voluntary. If you do not want your Houston Methodist health information to be accessible to authorized health care providers through the HIE, you may submit a signed non-participation (opt-out) form, available from your registration representative or www.houstonmethodist.org. If you decide not to participate, health care providers will not be able to access your health information through the HIE.

Important Information about Your Medical Records

Under State law, Houston Methodist may authorize the disposal of any medical record on or after the 10th anniversary of the date on which the patient was last treated by Houston Methodist. If the patient was younger than 18 years of age when last treated, Houston Methodist may authorize disposal of any medical records on the latter of the patient's 20th birthday or the 10th anniversary of the date the patient was last treated by Houston Methodist.

For this reason, Houston Methodist encourages patients to obtain copies of medical records if the patient wishes to retain them permanently. Medical records may be obtained through the Health Information Management department.

Assignment of Benefits

In consideration of the services rendered, the undersigned irrevocably assigns and transfers to Houston Methodist for himself/herself and dependents, all rights, title and interest in the claims or causes of action requiring benefits payable or reimbursements for the services rendered by Houston Methodist provided in any insurance policy(ies) or benefit plan. This irrevocable assignment and transfer shall be for the purpose of granting Houston Methodist independent right of recovery on the aforementioned claims, policy(ies) of insurance or benefit plan against any third party but shall not be construed to be an obligation of Houston Methodist to pursue any such claim or right of recovery. The undersigned hereby assigns to Houston Methodist all right, title, and interest in all claims or irrevocable benefits payable or reimbursements out of any third party action against any other person, entity, or insurance company, or out of recovery under the uninsured/underinsured motorist provisions of the medical payment provisions of any automobile insurance policy(ies) under which the patient may be entitled to recover. The undersigned further authorizes and appoints Houston Methodist as an authorized representative to pursue any claim to which he/she may be entitled to pursue or otherwise assert to obtain benefits or reimbursements from any responsible party, but in no event shall this be construed to be an affirmative obligation of Houston Methodist to pursue any such claim(s). The undersigned understands that if Houston Methodist is not paid in full by proceeds of any insurance policies, benefit plans or other sources of funds, then this assignment does not release his/her obligation and liability to Houston Methodist for payment of services and items provided by Houston Methodist.

I understand that this consent form will be valid and remain in effect as long as I receive my medical care at Houston Methodist. I understand that this consent may be revoked in writing at any time.

February 2, 2021
Date

Signature captured with Topaz by Brockman, Robert T

*If the patient is not competent to consent to medical treatment, thus precluding signing, please indicate the reason below:

Minor (under 18, not pregnant or married)	Mentally Incompetent
Unconscious	Other Physical Condition
Patient Unable to Sign	

Signature



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Patient (continued)

Patient Level Scans (continued)

Qualified Personal Representative

February 2, 2021

Legal Authority to Act on Behalf of Patient

QPR Authentication Method

Authenticated by (Name/Dept Name - print)

Page 1 of 1

Admit Date: 2/2/2021 Marital Stat: Married [2] Att Physician: Lai, Eugene C., MD Patient Class: Encounter: 2100089907549
Patient Name: BROCKMAN, ROBERT T
DOB: 1941

Sex: Male



Brockman, Robert T MRN: 003768603, DOB: 194

1941, Sex: M

Patient (continued)

Patient Level Scans (continued)



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Patient (continued)

Patient Level Scans (continued)

PO Add - Consent for Treatment

Electronic signature on 2/2/2021 9:15 AM (effective from 2/2/2021 expires 2/1/2022) - E-signed



Brockman, Robert T MRN: 003768603, DOB: 1941

1941, Sex: M

Patient (continued)

Patient Level Scans (continued)

Houston Methodist Leading Medicine

FOR HMSPG & HMPCG CLINIC USE

ADDENDUM TO CONSENT FOR MEDICAL TREATMENT & FINANCIAL RESPONSIBILITY

Insurance Coverage

I understand that I am responsible for confirming with my insurance company that the physician is currently under contract with my plan. If the insurance plan requires a referral and I or my provider have not provided one by the scheduled appointment time, I will be prepared to pay for the visit in full or reschedule.

Late Arrivals

Houston Methodist physicians work diligently to keep to scheduled appointment times. When a patient arrives late, it is impossible to maintain the schedule. I understand that if I arrive more than 20 minutes past the scheduled appointment time, I may be rescheduled so that other patients are not inconvenienced.

Check-In

I understand that filling out all required paperwork prior to my first appointment is important. This includes all information requested on both the Patient Information and Medical History Forms. Completion of the forms in advance of my first appointment will avoid delays in creating a chart and account at the initial visit. I understand that I should arrive at least 15 minutes prior to the scheduled appointment time so that all paperwork may be completed BEFORE seeing the physician. Although benefits are verified before the initial appointment, current insurance card(s) and a valid photo ID should be presented at check-in to verify identity. This ensures that all information is entered accurately and prevent errors in filing claims. Without an insurance card, Houston Methodist is unable to file with insurance, and the patient will be responsible for the day's charges. On EACH follow-up visit, the patient will be asked to verify demographic and insurance information so that records remain up-to-date. All co-payments will be collected at the time of service.

Return Check Fee

I understand there will be a return check fee of \$30.00 posted to my account for all checks returned due to insufficient funds or closed accounts.

Check-Out

I understand that payment for all co-payments and deductibles is due at the time of service. Typically, only an office visit charge is covered by the co-payment, and any additional services or treatment are subject to the specific details of the patient's insurance plan.

Non-Covered Services

I understand that an Insurance Waiver may be required to acknowledge understanding of responsibility for paying for non-covered services depending on the patient's insurance plan. If the visit is for non-covered services, I understand I will be responsible for paying for the visit in full.

No-Shows and Late Cancellations

Houston Methodist requires a 24-hour advance notice if the patient must cancel his/her appointment. For the convenience of our patients, Houston Methodist offers appointment reminder calls 48 hours prior to appointments which allows for cancellation or rescheduling. If I do not show for my appointment, I understand that I may be subject to a \$25.00 fee.

Minors

Parent(s) or guardian(s) of minor patients must accompany the minor for the visit unless a parent or guardian has signed a consent allowing for the minor patient to attend the physician visit on his or her own.

Telephone Consultation After Hours

I understand that if I request an urgent consultation with my provider after normal business hours resulting in a telephone encounter, I may be charged \$25.00 for the physician's time and service. This fee will be my responsibility and will be charged to my patient account. The provider will notify the patient prior to discussing any services which require the fee.

I understand that this consent form will be valid and remain in effect as long as I receive my medical care at Houston Methodist. I understand that this consent may be revoked in writing at any time.

Signature	February 2, 2021



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Patient (continued)

Patient Level Scans (continued)

		Date		
Senty K. B.	ordm			
	red by Brockman, Robert T			
*Signature				
*If the patient is not competent to conse	ent to medical treatmer	nt, thus precluding signing, plea	ase indicat	e the reason below:
	Minor (under 18, not			
	pregnant or married)			Mentally Incompetent
				G# 51 : 1
	Unconscious			Other Physical Condition
				Containon
	Patient Unable to			
	Sign			
Qualified Personal Representative		February 2, 2021		
		Date		
Legal Authority to Act on Behalf of Patient				
QPR Authentication Method				
Authenticated by (Name/Dept Name – print)				
Encounter: 2100089907549	Admit Date: 2/2/		Page 1 of	1
Patient Name: BROCKMAN, ROBERT T DOB: 1941	Marital Stat: Mar Att Physician: La	ried [2] ni, Eugene C., MD		
Sex: Male	Patient Class:	· • ·		



Brockman, Robert T MRN: 003768603, DOB: 94

941, Sex: M

Patient (continued)

Patient Level Scans (continued)



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 3/19/2021

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Lai, Eugene C., MD

Department

Address	Phone	Fax
6560 Fannin Street Suite 802	713-441-3780	713-790-5079
		6560 Fannin Street Suite 802 713-441-3780

Research Study Linked to Orders Only on 3/19/2021

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 3/19/2021

Problems last reviewed by Lai, Eugene C., MD on 2/3/2021 0759

Altered mental status [last edited by Escleto, Mary Yvette, RN on 3/15/2021 1232]

Diagnosis: Altered mental status Noted on: 03/15/2021 Chronic: No

AMS (altered mental status) [last edited by Bakshy, Aric Gill, MD on 3/15/2021 0921]

Diagnosis: AMS (altered mental status) Noted on: 03/15/2021 Chronic: No

Bacteremia [last edited by Patel, Amitkumar Natvarlal, MD on 3/16/2021 0859]

Diagnosis: Bacteremia Noted on: 03/16/2021 Chronic: No

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Idiopathic peripheral neuropathy [last edited by Lai, Eugene C., MD on 2/21/2020 2038]

Diagnosis: Idiopathic peripheral

neuropathy

Noted on: 02/21/2020 Chronic: No

Mixed anxiety depressive disorder [last edited by Lai, Eugene C., MD on 2/21/2020 2037]

Diagnosis: Mixed anxiety depressive

disorder

Noted on: 02/21/2020

Chronic: No

Parkinson disease (HCC) [last edited by Bingley, Desiree Y, RN on 3/18/2021 1611]

Diagnosis: Parkinson disease (HCC) Noted on: 03/18/2021 Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 3/19/2021

Allergies last reviewed by Smit, Nicola, RN on 3/15/2021 1758

No Known Allergies

History as of 3/19/2021

Medical History as of 3/19/2021

Medical last reviewed by Winn, Kiziah, RN on 3/15/2021

Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 3/19/2021

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

None

Surgical History as of 3/19/2021

Surgical last reviewed by Winn, Kiziah, RN on 3/15/2021

Substance & Sexuality History as of 3/19/2021

Tobacco Use as of 3/19/2021

Tobacco Use last reviewed by Winn, Kiziah, RN on 3/15/2021

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
_	_	Never Used	_	Provider

Alcohol Use as of 3/19/2021

Alcohol Use last reviewed by Winn, Kiziah, RN on 3/15/2021

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		_	_	Provider

Drug Use as of 3/19/2021

Drug Use last reviewed by Winn, Kiziah, RN on 3/15/2021

Drug Use	Types	Frequency	Comments	Source
Never	_	_	_	Provider

Sexual Activity as of 3/19/2021

Sexual Activity last reviewed by Winn, Kiziah, RN on 3/15/2021

Sexually Active	Birth Control	Partners	Comments	Source
Defer	_	_	_	Provider

Socioeconomic History as of 3/19/2021

Occupational as of 3/19/2021

Occupational last reviewed by Winn, Kiziah, RN on 3/15/2021

Socioeconomic as of 3/19/2021

Socioeconomic last reviewed by Winn, Kiziah, RN on 3/15/2021

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	_	_	_	_	English	Not Hispanic or	Caucasian	_



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 3/19/2021

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Latino

Social Documentation History as of 3/19/2021

Social Documentation last reviewed by Winn, Kiziah, RN on 3/15/2021

None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Smit, Nicola, RN on 3/15/2021 1759

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 3/13/2019

Entered on: 1/8/2020
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA

Start date: 10/1/2019

Informant: Family Member

Entered on: 1/8/2020
End date: 6/1/2021

rosuvastatin (CRESTOR) 5 mg tablet [reconciled by Pena, Flor, MA on 2/2/2021 0921]

Instructions: Take 5 mg by mouth daily.

Entered by: Pena, Flor, MA Entered on: 2/2/2021 Start date: 11/10/2020 Informant: Family Member

Myrbetriq 50 mg tablet extended release 24 hr [reconciled by Pena, Flor, MA on 2/2/2021 0921]



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 3/19/2021

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Instructions: Take 50 mg by mouth daily.

Entered by: Pena, Flor, MA Entered on: 2/2/2021 Start date: 12/14/2020 End date: 6/1/2021 Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [patient reported]

Instructions: Take 2 tablets by mouth 3 (three) times a day.

Entered by: Guandique, Zulma Entered on: 3/15/2021

Informant: Family Member

rivastigmine (EXELON) 9.5 mg/24 hr [patient reported]

Instructions: Place 1 patch on the skin daily.

Entered by: Guandique, Zulma Entered on: 3/15/2021

Informant: Family Member

apixaban (ELIQUIS) 2.5 mg tablet [patient reported]

Instructions: Take 2.5 mg by mouth 2 (two) times a day.

Entered by: Guandique, Zulma Entered on: 3/15/2021

Informant: Family Member

ciprofloxacin (CIPRO) 500 MG tablet

Instructions: Take 1 tablet (500 mg total) by mouth 2 (two) times a day for 10 days. Authorized by: Patel, Amitkumar Natvarlal, MD Ordered on: 3/19/2021 Start date: 3/19/2021 End date: 3/29/2021 Quantity: 20 tablet Refill: No refills remaining

tamsulosin (FLOMAX) 0.4 mg capsule

Instructions: Take 1 capsule (0.4 mg total) by mouth daily with dinner for 30 days.

Authorized by: Patel, Amitkumar Natvarlal, MD Ordered on: 3/19/2021 Start date: 3/19/2021 End date: 4/18/2021 Quantity: 30 capsule Refill: No refills remaining

Lactobacillus acidoph-L.bulgar (FLORANEX) 1 million cell tablet

Instructions: Take 1 tablet by mouth 3 (three) times a day for 30 days.

Authorized by: Patel, Amitkumar Natvarlal, MD Ordered on: 3/19/2021 Start date: 3/19/2021 End date: 4/18/2021 Quantity: 90 tablet Refill: No refills remaining

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: One tablet by mouth at bedtime

Authorized by: Lai, Eugene C., MD Ordered on: 3/19/2021 Start date: 3/19/2021 End date: 6/19/2021 Action: Patient taking differently Quantity: 90 tablet

Refill: No refills remaining

Stopped in Visit

None

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

clonAZEPAM (KlonoPIN) 0.5 MG tablet [419846811] (Active)



Brockman, Robert T MRN: 003768603, DOB Visit date: 3/19/2021

1941, Sex: M

Status: Active

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Electronically signed by: Lai, Eugene C., MD on 03/19/21 1522

Ordering user: Lai, Eugene C., MD 03/19/21 1522 Authorized by: Lai, Eugene C., MD Frequency: Routine, 03/19/21 - 06/19/21 2359

Frequency: Routine 03/19/21 - 06/19/21 2359 Admin instructions: One tablet by mouth at bedtime Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Order Details

Order Details

Priority	Expected	Study Status
Routine	3/19/2021 3:22 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
03/19/21 1522	Sign	Lai, Eugene C., MD	
05/31/21 2056	Do Not Order for Admission	Ahmed, Yahya, MD	

cionAZEPAM (KlonoPIN) 0.5 MG tablet [419846811]

Dose, Route, Frequency: As Directed

Dispense Quantity: 90 tablet Refills: 0

Sig: One tablet by mouth at bedtime

Patient taking differently: Take 0.5 mg by mouth nightly as needed (Taking only if Patient can't sleep). One tablet by mouth at

bedtime

Start Date: 03/19/21 End Date: 06/19/21 Written Date: 03/19/21 Expiration Date: 09/15/21

Providers

Ordering Provider and Authorizing Provider:

Lai, Eugene C., MD

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology All Parent Orders



Brockman, Robert T MRN: 003768603, DOB: Visit date: 3/19/2021

1941, Sex: M

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology All Parent Orders (continued)

Medications - All Orders

clonAZEPAM (KlonoPIN) 0.5 MG tablet [419846811]

Electronically signed by: Lai, Eugene C., MD on 03/19/21 1522

Ordering user: Lai, Eugene C., MD 03/19/21 1522

Authorized by: Lai, Eugene C., MD

Frequency: Routine 03/19/21 - 06/19/21 2359 Admin instructions: One tablet by mouth at bedtime Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Status: Active

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary

Visit Information

Date & Time 3/19/2021 3:17 PM

Provider Lai, Eugene C., MD Department HMNI Stanley H Appel Dept of Neurology Encounter # 2100096593104

Generated by 1043159 at 6/2/21 3:28 PM



Brockman, Robert T MRN: 003768603, DOB: Visit date: 3/19/2021

Chronic: No

1941, Sex: M

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology

Visit Information

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Co	nta	CIS

	Туре	Contact	Phone	User
03/19/2021 02:59 PM CDT	Interface (Incoming)	Briargrove Pharmacy - Houston, TX - 6435 San Felipe	713-783-5704	Interface, Surescripts In

Nursing Assessment

No Nursing Assessment available for this encounter.

Questionnaires

No completed forms available for this encounter.

Research Study Linked to Refill on 3/19/2021

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 3/19/2021

Problems last reviewed by Lai, Eugene C., MD on 2/3/2021 0759

Altered mental status [last edited by Escleto, Mary Yvette, RN on 3/15/2021 1232]

Diagnosis: Altered mental status Noted on: 03/15/2021 Chronic: No

AMS (altered mental status) [last edited by Bakshy, Aric Gill, MD on 3/15/2021 0921]

Diagnosis: AMS (altered mental status) Noted on: 03/15/2021 Chronic: No

Bacteremia [last edited by Patel, Amitkumar Natvarlal, MD on 3/16/2021 0859]

Diagnosis: Bacteremia Noted on: 03/16/2021 Chronic: No

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Idiopathic peripheral neuropathy [last edited by Lai, Eugene C., MD on 2/21/2020 2038]

Diagnosis: Idiopathic peripheral Noted on: 02/21/2020 Chronic: No

neuropathy

Mixed anxiety depressive disorder [last edited by Lai, Eugene C., MD on 2/21/2020 2037]

Diagnosis: Mixed anxiety depressive Noted on: 02/21/2020 Chronic: No

disorder

Parkinson disease (HCC) [last edited by Bingley, Desiree Y, RN on 3/18/2021 1611]

Diagnosis: Parkinson disease (HCC) Noted on: 03/18/2021 Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 3/19/2021

Allergies last reviewed by Smit, Nicola, RN on 3/15/2021 1758

No Known Allergies

History as of 3/19/2021



Brockman, Robert T MRN: 003768603, DOB: Visit date: 3/19/2021

1941, Sex: M

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient	as-of	Vicit	(continu	ıad)
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Medical I	History	as of	3/19/	2021
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Medical last reviewed by Winn, Kiziah, RN on 3/15/2021

Surgical History as of 3/19/2021

Surgical last reviewed by Winn, Kiziah, RN on 3/15/2021 None

Substance & Sexuality History as of 3/19/2021

Tobacco Use as of 3/19/2021

Tobacco Use last reviewed by Winn, Kiziah, RN on 3/15/2021

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
_	_	Never Used	_	Provider

Alcohol Use as of 3/19/2021

Alcohol Use last reviewed by Winn, Kiziah, RN on 3/15/2021

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		_	_	Provider

Drug Use as of 3/19/2021

Drug Use last reviewed by Winn, Kiziah, RN on 3/15/2021

Drug Use	Types	Frequency	Comments	Source
Never	_	_	_	Provider

Sexual Activity as of 3/19/2021

Sexual Activity last reviewed by Winn, Kiziah, RN on 3/15/2021

Sexually Active	Birth Control	Partners	Comments	Source
Defer	_	_	_	Provider

Socioeconomic History as of 3/19/2021

Occupational as of 3/19/2021

Occupational last reviewed by Winn, Kiziah, RN on 3/15/2021 None

Socioeconomic as of 3/19/2021

Socioeconomic last reviewed by Winn, Kiziah, RN on 3/15/2021

		lumber of Y Children E	ears l Education l		Preferred Language	Ethnicity	Race	Source
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Brockman, Robert T MRN: 003768603, DOB: Visit date: 3/19/2021

1941, Sex: M

2/40/2024 Potill in UMNI Stanloy H Annal Dont of Neurology (continued)

Married	_	_	_	_	English	Not Hispanic or Latino	Caucasian	_
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None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Smit, Nicola, RN on 3/15/2021 1759

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day, 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 10/9/2019 Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 10/9/2019 Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 3/13/2019 Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 10/1/2019 End date: 6/1/2021 Informant: Family Member

rosuvastatin (CRESTOR) 5 mg tablet [reconciled by Pena, Flor, MA on 2/2/2021 0921]

Instructions: Take 5 mg by mouth daily.

Entered by: Pena, Flor, MA Entered on: 2/2/2021 Start date: 11/10/2020 Informant: Family Member



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 3/19/2021

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Myrbetriq 50 mg tablet extended release 24 hr [reconciled by Pena, Flor, MA on 2/2/2021 0921]

Instructions: Take 50 mg by mouth daily.

Entered by: Pena, Flor, MA Entered on: 2/2/2021 Start date: 12/14/2020 End date: 6/1/2021

Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [patient reported]

Instructions: Take 2 tablets by mouth 3 (three) times a day.

Entered by: Guandique, Zulma Entered on: 3/15/2021

Informant: Family Member

rivastigmine (EXELON) 9.5 mg/24 hr [patient reported]

Instructions: Place 1 patch on the skin daily.

Entered by: Guandique, Zulma Entered on: 3/15/2021

Informant: Family Member

apixaban (ELIQUIS) 2.5 mg tablet [patient reported]

Instructions: Take 2.5 mg by mouth 2 (two) times a day.

Entered by: Guandique, Zulma Entered on: 3/15/2021

Informant: Family Member

ciprofloxacin (CIPRO) 500 MG tablet

Instructions: Take 1 tablet (500 mg total) by mouth 2 (two) times a day for 10 days. Authorized by: Patel, Amitkumar Natvarlal, MD Ordered on: 3/19/2021 Start date: 3/19/2021 End date: 3/29/2021

Quantity: 20 tablet Refill: No refills remaining

tamsulosin (FLOMAX) 0.4 mg capsule

Instructions: Take 1 capsule (0.4 mg total) by mouth daily with dinner for 30 days. Authorized by: Patel, Amitkumar Natvarlal, MD Ordered on: 3/19/2021 Start date: 3/19/2021 End date: 4/18/2021 Quantity: 30 capsule Refill: No refills remaining

Lactobacillus acidoph-L.bulgar (FLORANEX) 1 million cell tablet

Instructions: Take 1 tablet by mouth 3 (three) times a day for 30 days.

Authorized by: Patel, Amitkumar Natvarlal, MD Ordered on: 3/19/2021 Start date: 3/19/2021 End date: 4/18/2021 Quantity: 90 tablet Refill: No refills remaining

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: One tablet by mouth at bedtime

Authorized by: Lai, Eugene C., MD Ordered on: 3/19/2021 Start date: 3/19/2021 End date: 6/19/2021

Action: Patient taking differently Quantity: 90 tablet

Refill: No refills remaining

Stopped in Visit

None

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders



Brockman, Robert T MRN: 003768603, DOB: Visit date: 3/19/2021

1941, Sex: M

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Medications

clonAZEPAM (KlonoPIN) 0.5 MG tablet [Pharmacy Med Name: clonazepam 0.5 mg tablet] [419846810] (Pending)

Electronically signed by: Lai, Eugene C., MD on 03/19/21 1506

Ordering provider: Lai, Eugene C., MD

Status: **Pending**

Ordering user: Lai, Eugene C., MD 03/19/21 1506 Authorized by: Lai, Eugene C., MD

Frequency: 03/19/21 - Until Discontinued

Class: Normal

Pended by: Interface, Surescripts In 03/19/21 1459

Medication comments: This prescription was filled on 3/19/2021. Any refills authorized will be placed on file.

Order Details

Order Details

Priority	Expected	Study Status
	3/19/2021 3:06 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	Until Discontinued	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
03/19/21 1459	Pend	Interface, Surescripts In	
03/19/21 1506	Sian	Lai, Eugene C., MD	

clonAZEPAM (KlonoPIN) 0.5 MG tablet [Pharmacy Med Name: clonazepam 0.5 mg tablet] [419846810]

Dose, Route, Frequency: As Directed

Dispense Quantity: 30 tablet Refills: 1

Note to Pharmacy: This prescription was filled on 3/19/2021. Any refills authorized will be placed on file.

Sig: TAKE 1 TABLET BY MOUTH IN THE EVENING AT BEDTIME

Start Date: 03/19/21 End Date: -Written Date: -Expiration Date: --

Ordering Date: 03/19/21

Providers

Ordering Provider and Authorizing Provider:

Lai, Eugene C.

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Eliquis 2.5 mg tablet [419846809] (Pending)

Electronically signed by: Lai, Eugene C., MD on 03/19/21 1506 Status: Pending



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 3/19/2021

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Ordering user: Lai, Eugene C., MD 03/19/21 1506

Authorized by: Lai, Eugene C., MD

Frequency: 03/19/21 - Until Discontinued Pended by: Interface, Surescripts In 03/19/21 1459

Reordered from: apixaban (ELIQUIS) 2.5 mg tablet

Ordering provider: Lai, Eugene C., MD

Class: Normal

Order Details

Order Details

Priority	Expected	Study Status
	3/19/2021 3:06 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	Until Discontinued	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
03/19/21 1459	Pend	Interface, Surescripts In	
03/19/21 1506	Sian	Lai, Eugene C., MD	Reorder from Order: 418718833

Eliquis 2.5 mg tablet [419846809]

Dose, Route, Frequency: As Directed

Refills: 0 Dispense Quantity: 180 tablet

Sig: TAKE 1 TABLET BY MOUTH TWICE DAILY

Start Date: 03/19/21 End Date: --Written Date: --Expiration Date: --

Ordering Date: 03/19/21

Original Order: apixaban (ELIQUIS) 2.5 mg tablet [418718833]

Ordering Provider and Authorizing Provider:

Lai, Eugene C.

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe 6435 San Felipe, Houston TX 77057

Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**



Brockman, Robert T MRN: 003768603, DOB: Visit date: 3/19/2021

1941, Sex: M

Status: Pending

Status: Pending

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology **All Parent Orders (continued)**

Medications - All Orders

Eliquis 2.5 mg tablet [419846809]

Electronically signed by: Lai, Eugene C., MD on 03/19/21 1506

Ordering user: Lai, Eugene C., MD 03/19/21 1506 Ordering provider: Lai, Eugene C., MD

Authorized by: Lai, Eugene C., MD

Frequency: 03/19/21 - Until Discontinued Class: Normal

Pended by: Interface, Surescripts In 03/19/21 1459

Reordered from: apixaban (ELIQUIS) 2.5 mg tablet [418718833]

clonAZEPAM (KlonoPIN) 0.5 MG tablet [Pharmacy Med Name: clonazepam 0.5 mg tablet] [419846810]

Electronically signed by: Lai, Eugene C., MD on 03/19/21 1506 Ordering provider: Lai, Eugene C., MD

Ordering user: Lai, Eugene C., MD 03/19/21 1506

Authorized by: Lai, Eugene C., MD

Frequency: 03/19/21 - Until Discontinued Pended by: Interface, Surescripts In 03/19/21 1459

Medication comments: This prescription was filled on 3/19/2021. Any refills authorized will be placed on file.

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary**

Class: Normal

Visit Information

Date & Time Provider Department Encounter# 3/19/2021 2:59 PM HMNI Stanley H Appel Dept of 2100096591186 Lai, Eugene C., MD

Neurology



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/2/2021

1941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information	Provi	ider i	Infor	mati	on
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Encounter Provider	Authorizing Provider	Referring Provider
Lai, Eugene C., MD	Lai, Eugene C., MD	Pool, James L., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of	6560 Fannin Street Suite 802	713-441-3780	713-790-5079
Neurology	Houston TX 77030-2725		

Follow-up and Dispositions

• Return in about 4 months (around 6/2/2021) for Next scheduled follow up.

Level of Service

Level of Service

PR OFFICE/OUTPATIENT ESTABLISHED MOD MDM 30-39 MIN

Research Study Linked to Office Visit on 2/2/2021

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/2/2021

Problems last reviewed by Lai, Eugene C., MD on 2/2/2021 1008

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Idiopathic peripheral neuropathy [last edited by Lai, Eugene C., MD on 2/21/2020 2038]

Diagnosis: Idiopathic peripheral

neuropathy

Noted on: 02/21/2020

Chronic: No

Mixed anxiety depressive disorder [last edited by Lai, Eugene C., MD on 2/21/2020 2037]

Diagnosis: Mixed anxiety depressive

lisorder

Noted on: 02/21/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 2/2/2021

Allergies last reviewed by Lai, Eugene C., MD on 2/2/2021 1008 No Known Allergies

History as of 2/2/2021

Medical History as of 2/2/2021

Medical last reviewed by Lai, Eugene C., MD on 2/2/2021

Surgical History as of 2/2/2021

Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Surgical last reviewed by Lai, Eugene C., MD on 2/2/2021 None

Family History as of 2/2/2021

Substance & Sexuality History as of 2/2/2021

Tobacco Use as of 2/2/2021

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/2/2021

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source

Alcohol Use as of 2/2/2021

Alcohol Use last reviewed by Pena, Flor, MA on 2/2/2021

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		_	_	Provider

Drug Use as of 2/2/2021

Drug Use last reviewed by Pena, Flor, MA on 2/2/2021

Drug Use	Types	Frequency	Comments	Source
Never	_	_	_	Provider

Sexual Activity as of 2/2/2021

Sexual Activity last reviewed by Pena, Flor, MA on 2/2/2021

Sexually Active	Birth Control	Partners	Comments	Source
Defer	_	_	_	Provider

Socioeconomic History as of 2/2/2021

Socioeconomic as of 2/2/2021

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	_	_	_	_	English	Not Hispanic or Latino	Caucasian	_

Medication List

Medication List



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/2/2021 1008

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA

Start date: 3/13/2019

Entered on: 1/8/2020
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA

Start date: 10/1/2019

End date: 6/1/2021

Informant: Family Member

Exelon 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.

Authorized by: Lai, Eugene C., MD

Start date: 6/12/2020

Quantity: 90 patch

Ordered on: 6/12/2020

End date: 3/15/2021

Refill: 1 refill by 6/12/2021

Eliquis 2.5 mg tablet

Instructions: TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.

Authorized by: Lai, Eugene C., MD

Start date: 11/11/2020

Quantity: 180 tablet

Ordered on: 11/11/2020

End date: 2/9/2021

Refill: No refills remaining

carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Authorized by: Lai, Eugene C., MD

Start date: 11/11/2020

Quantity: 540 tablet

Ordered on: 11/11/2020

End date: 3/15/2021

Refill: 3 refills by 11/11/2021

clonAZEPAM (KlonoPIN) 0.5 MG tablet



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Instructions: TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME

Authorized by: Lai, Eugene C., MD

Ordered on: 12/22/2020

Start date: 12/22/2020

End date: 2/20/2021

Quantity: 30 tablet

Refill: 1 refill by 6/20/2021

rosuvastatin (CRESTOR) 5 mg tablet [reconciled by Pena, Flor, MA on 2/2/2021 0921]

Instructions: Take 5 mg by mouth daily.

Entered by: Pena, Flor, MA

Start date: 11/10/2020

Entered on: 2/2/2021

Informant: Family Member

Myrbetriq 50 mg tablet extended release 24 hr [reconciled by Pena, Flor, MA on 2/2/2021 0921]

Instructions: Take 50 mg by mouth daily.

Entered by: Pena, Flor, MA

Start date: 12/14/2020

Informant: Family Member

Entered on: 2/2/2021

End date: 6/1/2021

Stopped in Visit

None

Progress Notes

Progress Notes

Lai, Eugene C., MD at 2/2/2021 0930

Author: Lai, Eugene C., MD Service: — Author Type: Physician

Filed: 2/3/2021 7:59 AM Encounter Date: 2/2/2021 Creation Time: 2/2/2021 9:28 AM

Status: Signed Editor: Lai, Eugene C., MD (Physician)

NEUROLOGY FOLLOW-UP CLINIC VISIT

Patient is a 79-year-old ambidextrous man with a history of Parkinson's disease, mild cognitive impairment, REM sleep behavior disorder, ocular migraine, hyperlipidemia, hypothyroidism, atrial fibrillation, bladder cancer, glaucoma, melanoma, basal cell skin cancer, and depression.

He comes with his wife, Dorothy, for follow-up of his Parkinson's disease. Last visit was on 2/12/2020. He reports physically stable. He has retired as CEO of his software company but is still under a lot of stress. Sleep is better with trazodone and clonazepam. Appetite is good. Basic activities of daily living are independent, but slower. Gait and balance are mildly unsteady but he does not use a cane. He has no recent fall. Moods are stressed and depressed. His wife needs to help him in organizing his responsibilities and taking care of legal issues. Memory is impaired but stable. He uses Exelon patch 9.5/24h daily. He does not exercise regularly due to low back pain and also not able to go to the Houstonian for exercise. He tries to walk a little with his housekeeper every other day. He takes carbidopa/levodopa 25/100 2 tablets only 2 times a day at 8 am and 8 pm, and he typically forgets his 2 pm dose.

There is no new neurological complaint. He has slowness, stiffness, and gait imbalance. He lacks energy and is inactive. He denies recent headache, dizziness, weakness, confusion, dysarthria, dysphagia.

MEDICATIONS:

Sig

- Myrbetriq 50 mg tablet extended Take 50 mg by mouth daily. release 24 hr
- rosuvastatin (CRESTOR) 5 mg 5 mg daily. tablet
- clonAZEPAM (KlonoPIN) 0.5 TAKE ONE TABLET BY MOUTH EVERY EVENING

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/2/2021

1941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

MG tablet AT BEDTIME

carbidopa-levodopa (SINEMET) TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

25-100 mg per tablet

 Eliquis 2.5 mg tablet TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two)

times A day.

Place 1 patch on the skin daily. Exelon 9.5 mg/24 hr

buPROPion SR (WELLBUTRIN Take two tablets every morning and one every evening

SR) 100 MG 12 hr tablet to control depression

 levomefolate calcium (L-Take one tablet by mouth daily to lower homocysteine

METHYLFOLATE ORAL)

levothyroxine (SYNTHROID) 75 Take one tablet every morning for hypothyroidism

mcg tablet

· omega 3-dha-epa-fish oil (FISH Take by mouth.

OIL) 100-160-1,000 mg capsule

testosterone (ANDROGEL) Place on the skin.

20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump

traZODone (DESYREL) 50 MG Take 50 mg by mouth.

tablet

REVIEW OF SYSTEMS:

Constitutional: Positive for easy fatigue, lack of energy. Weight loss of about 3.5 lbs. since last visit.

Eyes: Positive for visual disturbance due to glaucoma.

ENT: Positive for hearing loss. No nose bleed, sore throat.

Respiratory: Negative for cough and shortness of breath.

Cardiovascular: Negative for chest pain, palpitation, leg swelling.

Gastrointestinal: Positive for mild constipation. No diarrhea, abdominal pain.

Genitourinary: Positive for nocturia, frequency, urgency. No dysuria.

Musculoskeletal: Positive for low back pain. Negative for other joint pain, joint swelling, muscle pain.

Skin: Negative for rash, lesion.

Hematological: Negative for bruising, bleeding, adenopathy.

Allergy/Immunology: Negative for allergy symptoms.

Psychiatric/Behavioral: Positive for anxiety, depression, insomnia. No agitation.

Neurological: See above.

FAMILY/SOCIAL HISTORY: Lives with wife. No cigarettes and rare alcohol. They are in the process of moving to the River Oaks area closer to their son.

EXAMINATION:

Vitals:

02/02/21 0919 02/02/21 0922

BP: 122/74 133/74 BP Location: Left arm Left arm Patient Position: Sitting Standing Pulse: 84 76

Temp: 96.9 °F

Weight: 86 kg (189 lb 9.6 oz)

Height: 5' 11.5"

General: Well developed and well nourished elderly man in no acute distress. He is subdued but pleasant and cooperative.

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/2/2021

1941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

<u>Physical</u>: Head and face are normal. No pain or tenderness to palpation. No edema or rash. Mild hypomimia and hypophonia.

Neurological: 'On' state

MS: He is alert and attentive. O x person, place, and time. He follows complex verbal commands. Memory is 4/4 immediate -> 0/4 delayed. Comprehension and expression are slower. Insight and judgment are mildly impaired. MoCA score (1/8/2020) = 20/30.

CN: II-XII symmetrical and adequate except bilateral hearing loss. EOM full and tongue is midline.

Motor: Strength is 5/5 and symmetrical except bilateral hip flexors, 5-/5. No tremor and mild rigidity in limbs.

Sensory: Decreased to vibration in both feet.

Coordination: F->N->F without dysmetria. Rapid alternating movements are slower bilaterally.

Gait: He arises from sitting without assistance. He walks with a slightly wide-based gait. Decreased arm swings and hesitant in turning without assistance. He can perform heel, toe walking but not tandem walking.

	VISIT DIAGNOSES:	ICD-10-CM
1.	Parkinson's disease (HCC)	G20
2.	Mild cognitive impairment	G31.84
3.	Mixed anxiety depressive disorder	F41.8
4.	Idiopathic peripheral neuropathy	G60.9

IMPRESSION:

Significant for: Clinical findings are consistent with Parkinson's disease with mild cognitive impairment.

He is under a lot of stress trying to still run his company by himself, and his wife is also stressed out.

He has signs of mild cognitive impairment and peripheral neuropathy with gait imbalance.

Neurological and cognitive examinations are without notable change from last visit.

Physical examination is stable.

PLANS:

Patient's neurologic condition and management are discussed with him and his wife at length again.

He needs to take carbidopa/levodopa 25/100 2 tablets 3 times a day at 8:30 am, 1:30 pm and 6:30 pm and on time. Take about at least 30 minutes before or after meals.

Dut Evalor notes 0.5 mg/0.4s topically every day on about

Put Exelon patch 9.5 mg/24h topically every day on shoulders and back and rotate over 14 areas, for cognitive stabilization. Get instructions from the Internet for "Exelon patch placement'.

Continue trazodone 50 mg and clonazepam 0.5 mg at bedtime for sleep and RBD.

Continue bupropion 100 mg 2 tablets in the morning and 1 tablet at bedtime for mood stabilization.

Continue other present medications.

I will order physical and occupational therapy at home after he moves into his new house.

He should not drive his car for now.

Keep physically and mentally active. Exercise regularly.

Follow up with Dr. James Pool, PCP.

Return to clinic in 4 months.

Total time spent today in evaluation and treatment of patient, including review of previous medical records and counseling = 32 minutes.

PATIENT EDUCATION:

[x] Patient [x] Significant other(s)

Topic:

Disease specific issues [x]

Medications [x]

Medication Side effects [x]

Tests [x]



Brockman, Robert T MRN: 003768603, DOB: 1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

Treatment/follow-up plans [x]

Consults [x] Surgical plan []

Teaching Method: Discussion [x] Handouts []

Patient/family Response: Verbalize understanding and agree(s) with treatment plans [x]

Today I spent >50% of visit time on counseling and patient education.

Eugene C. Lai, M.D., Ph.D.

igene Estaims

Robert W. Hervey Distinguished Endowed Chair in Parkinson's Disease

Professor of Neurology and Neuroscience Director, Neurodegenerative Disease Clinic

Stanley H. Appel Department of Neurology Houston Methodist Neurological Institute & Weill Cornell Medical School 6560 Fannin, Suite 802 Houston, Texas 77030

TEL. 713-441-0239 FAX. 713-790-5044

Electronically signed by Lai, Eugene C., MD at 2/3/2021 7:59 AM

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**

Medications - All Orders

rosuvastatin (CRESTOR) 5 mg tablet [335306867] Patient-reported historical medication

Ordering date: 02/02/21 0921

Authorized by: Provider, Historical, MD

Ordering mode: Standard

Frequency: Routine Daily 11/10/20 - Until Discontinued

Class: Historical Med

Myrbetriq 50 mg tablet extended release 24 hr [335306868] Patient-reported historical medication

Ordering date: 02/02/21 0921 Ordering mode: Standard

Authorized by: Provider, Historical, MD

Class: Historical Med

Frequency: Routine Daily 12/14/20 - 06/01/21

Discontinued by: Francia, Loi S 06/01/21 1237

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/2/2021

1941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals (continued)

Most recent update: 2/2/2021 9:24 AM by Pena, Flor, Vital Signs - Last Recorded MA BP Temp 96.9 °F Pulse Ht 133/74 (BP 5' 11.5" 86 kg (189 lb 9.6 oz) 76 Location: Left arm, Patient Position: Standing) BMI 26.08 kg/m²

Flowsheets

Custom Formula Data

Row Name	02/02/21 0922	02/02/21 0919		
Adult IBW/VT Calcu	Adult IBW/VT Calculations			
IBW/kg (Calculated)	_	76.45 -FP at 02/02/21 0919		
Low Range Vt 6mL/kg	_	458.7 mL/kg -FP at 02/02/21 0919		
Adult Moderate Range Vt 8mL/kg	_	611.6 mL/kg -FP at 02/02/21 0919		
Adult High Range Vt 10mL/kg	_	764.5 mL/kg -FP at 02/02/21 0919		
IBW/kg (Calculated) (lbs)	_	168.54 -FP at 02/02/21 0919		
OTHER				
BMI (Calculated)	_	26.08 -FP at 02/02/21 0919		
IBW/kg (Calculated) Male	_	76.45 kg -FP at 02/02/21 0919		
IBW/kg (Calculated) Female	_	71.95 kg -FP at 02/02/21 0919		
BMI	_	26.08 -FP at 02/02/21 0919		
Total Weight Change	_	189.6 -FP at 02/02/21 0919		
Total Weight Change	_	+189.6 -FP at 02/02/21 0919		
Weight Change Since Last Visit	_	-3.4 -FP at 02/02/21 0919		
Weight Change Since Last Visit	_	-3.4 -FP at 02/02/21 0919		
Internal Initial Weight - Reference Only	_	0 -FP at 02/02/21 0919		
Fluid Needs	_	62172 -FP at 02/02/21 0919		
BSA (Calculated - sq m)	_	2.08 sq meters -FP at 02/02/21 0919		
ED VITALS FORMULA	2 -FP at 02/02/21 0924	3 -FP at 02/02/21 0922		
MAP (Calculated)	93.67 -FP at 02/02/21 0924	90 -FP at 02/02/21 0922		
Body Composition Analysis				
BMI		26.08		



Brockman, Robert T MRN: 003768603, DOB: 1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

		-FP at 02/02/21 0919
Dietitian Vitals		
BMI (Calculated)	_	26.08 -FP at 02/02/21 0919
IBW/kg (Calculated)	_	76.45 -FP at 02/02/21 0919
IBW/kg (Calculated) Female	_	71.95 kg -FP at 02/02/21 0919
IBW/kg (Calculated) Males	_	76.45 -FP at 02/02/21 0919
Fluid Needs		
Total Fluid Estimated Needs	_	62172 -FP at 02/02/21 0919
Relevant Labs and Vitals		
Temp (in Celsius)	_	36.1 -FP at 02/02/21 0922

Data

Row Name	02/02/21 0922	02/02/21 0919	
OTHER			
Change in SBP	11 -FP at 02/02/21 0924	122 -FP at 02/02/21 0922	

Encounter Vitals

Row Name	02/02/21 0922	02/02/21 0919
Enc Vitals		
BP	133/74 -FP at 02/02/21 0924	122/74 -FP at 02/02/21 0922
Pulse	76 -FP at 02/02/21 0924	84 -FP at 02/02/21 0922
Temp	_	96.9 °F -FP at 02/02/21 0922
Weight	_	86 kg (189 lb 9.6 oz) -FP at 02/02/21 0919
Height	_	5' 11.5" -FP at 02/02/21 0919
Vital Signs		
BP Location	Left arm -FP at 02/02/21 0924	Left arm -FP at 02/02/21 0922
Patient Position	Standing -FP at 02/02/21 0924	Sitting -FP at 02/02/21 0922

Social Determinants

Row Name	02/02/21 09:19:45
Alcohol Use	
How often do you have a drink containing alcohol?	Never Data migrated from History -FP at 05/18/21 1428

Vital Signs			
	Row Name	02/02/21 1019	
	stad by 1012150	-+ C/O/O4 0.00 DM	Da 25

Brockman, Robert T MRN: 003768603, DOB Visit date: 2/2/2021

1941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

OTHER		
Stimulants	000 -DH at 02/02/21 0919	
Sedatives	220 -DH at 02/02/21 0919	
Narcotics	100 -DH at 02/02/21 0919	

User Key

(r) = Recorded By, (t) = Taken By, (c) = Cosigned By

Initials	Name	Effective Dates	Provider Type	Discipline
FP	Pena, Flor, MA	11/21/20 - 03/15/21	Medical Assistant	_
DH	Hm Interface, Documentation Incoming	_	_	_

Patient Instructions

Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals.

Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'.

Will order physical therapy after you moved to your new house.

No driving for now.

Continue other present medications.

Keep physically and mentally active. Exercise regularly.

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology Patient Instuctions

Patient Instructions History

Patient Instructions Revisions	Status	Date&Time	By User
Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals. Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'. Will order physical therapy after you moved to your new house. No driving for now. Continue other present medications. Keep physically and mentally active. Exercise regularly.	Addendum	02/02/2021 10:06 AM	LAI, EUGENE
Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals. Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement". Will order physical therapy after you moved to your new house. Continue other present medications. Keep physically and mentally active. Exercise regularly.	Signed	02/02/2021 10:05 AM	LAI, EUGENE

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/2/2021

1941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary

AFTER VISIT SUMMARY



Robert T. Brockman MRN: 003768603

Instructions from Eugene C. Lai, MD

Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals. Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'. Will order physical therapy after you moved to your new house. No driving for now.

Continue other present medications.

Keep physically and mentally active. Exercise regularly.



Return in about 4 months

(around 6/2/2021) for Next scheduled follow up.

What's Next

You currently have no upcoming appointments scheduled.

Allergies

No Known Allergies

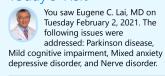
Preventive Care

Topic	Due
COVID-19 VACCINE (1 of 2)	05/28/1957
SHINGLES VACCINES (1)	05/28/1991

← Current Health Issues

Dementia associated with Parkinson's disease Nerve disorder Mixed anxiety depressive disorder Parkinson disease

Today's Visit

















Robert T. Brockman (MRN: 003768603) • Printed by Eugene C. Lai, MD at 2/2/21 10:09 AM

Page 1 of 3 Epic



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Relationship Specialty Notifications Start End Pool, James L., MD PCP - General Endocrinology 12/26/19 Phone: 713-798-0180 Fax: 713-798-0174

MyChart Signup

Our records indicate that you have an active Houston Methodist MyChart account.

You can view your "After Visit Summary" by going to HoustonMethodist.org/mychart and logging in with your Houston Methodist MyChart username and password. If you are under 18 and would like to view your "After Visit Summary," please have your parent or guardian login with his or her own Houston Methodist MyChart username and password and access your records.

If you have questions, please call 832.667.5694 to speak with our Houston Methodist Customer Service Team. Remember, do not use Houston Methodist MyChart if you have an urgent need or request. For medical emergencies, dial 911.

Robert T. Brockman (MRN: 003768603) • Printed by Eugene C. Lai, MD at 2/2/21 10:09 AM

Page 2 of 3 Epic



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/2/2021

941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Your Medication List as of February 2, 2021 10:09 AM

(i) Always use your most recent med list.	
AndroGeL 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump Generic drug: testosterone	Place on the skin.
buPROPion SR 100 MG 12 hr tablet Commonly known as: WELLBUTRIN SR	Take two tablets every morning and one every evening to control depression
carbidopa-levodopa 25-100 mg per tablet Commonly known as: SINEMET	TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
clonAZEPAM 0.5 MG tablet Commonly known as: KlonoPIN	TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME
Eliquis 2.5 mg tablet Generic drug: apixaban	TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.
Exelon 9.5 mg/24 hr Generic drug: rivastigmine	Place 1 patch on the skin daily.
<mark>Fish Oil</mark> 100-160-1,000 mg capsule Generic drug: omega 3-dha-epa-fish oil	Take by mouth.
L-METHYLFOLATE ORAL	Take one tablet by mouth daily to lower homocysteine
Myrbetriq 50 mg tablet extended release 24 hr Generic drug: mirabegron	Take 50 mg by mouth daily.
rosuvastatin 5 mg tablet Commonly known as: CRESTOR	5 mg daily.
Synthroid 75 mcg tablet Generic drug: levothyroxine	Take one tablet every morning for hypothyroidism
traZODone 50 MG tablet Commonly known as: DESYREL	Take 50 mg by mouth.

Robert T. Brockman (MRN: 003768603) • Printed by Eugene C. Lai, MD at 2/2/21 10:09 AM

Page 3 of 3 Epic



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/2/2021

1941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary (continued)**

Visit Information

Date & Time Provider Department Encounter# HMNI Stanley H Appel Dept of 2100089907549 2/2/2021 9:30 AM Lai, Eugene C., MD

Neurology

Coding Summary for this Encounter

Code	Description	Service Date	Service Provider	Qty
99214	PR OFFICE/OUTPATIENT ESTABLISHED MOD	2/2/2021	Lai, Eugene C., MD	1
	MDM 30-39 MIN			

Dx: Parkinson's disease [G20], Mild cognitive impairment, so stated [G31.84], Other specified anxiety disorders [F41.8], Hereditary and idiopathic neuropathy, unspecified [G60.9]



Brockman, Robert T MRN: 003768603, DOB: Visit date: 12/22/2020

1941, Sex: M

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology

Visit Information

nta	

	Туре	Contact	Phone	User
12/22/2020 02:00 PM	Interface	Briargrove Pharmacy -	713-783-5704	Interface, Surescripts In
CST	(Incoming)	Houston, TX - 6435 San Felipe		

Nursing Assessment

No Nursing Assessment available for this encounter.

Questionnaires

No completed forms available for this encounter.

Research Study Linked to Refill on 12/22/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 12/22/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Idiopathic peripheral neuropathy [last edited by Lai, Eugene C., MD on 2/21/2020 2038]

Diagnosis: Idiopathic peripheral

neuropathy

Noted on: 02/21/2020

Chronic: No

Mixed anxiety depressive disorder [last edited by Lai, Eugene C., MD on 2/21/2020 2037]

Diagnosis: Mixed anxiety depressive

disorder

Noted on: 02/21/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 12/22/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907 No Known Allergies

History as of 12/22/2020

Medical History as of 12/22/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Surgical History as of 12/22/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Family History as of 12/22/2020

Family History as of 12/22/2020

Brockman, Robert T MRN: 003768603, DOB: Visit date: 12/22/2020

1941, Sex: M

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

bacco coc a	s of 12/22/20	20						
Tobacc	o Use last re	viewed by Lai,	Eugene C., N	/ID on 2/12/20)20			
Smoking S	tatus	Sr	noking Start I	Date Smo	oking Quit Date	Packs	/Day	Years Used
Never Smol		_						_
Types		Co	omments	Smo Stat	okeless Tobaco	Smoke Tobac Date	eless co Quit	Source
_		_		Nev	er Used	_		Provider
cohol Use as	of 12/22/202	0						
Alcoho	l Use last rev	iewed by Riley	ν, Lillian R, Μ	A on 2/12/20	20			
Alcohol Us	e	Drinks/Wee	k	Alcohol/We	ek	Comments	i	Source
Never				_		_		Provider
ug Use as of	12/22/2020							
		wed by Riley, L	illian R, MA o	on 2/12/2020				
Drug Use		Types		Frequency		Comments	i	Source
Never				_		_		Provider
	as of 12/22/2		ilev Lillian R	MA on 2/12/	2020			
Sexual	Activity last	reviewed by R	_		2020	Comments	:	Source
	Activity last		_	MA on 2/12/ Partners	2020	Comments —		Source Provider
Sexually A	Activity last	reviewed by Ri Birth Contro —	_		2020	Comments		
Sexually Address of the Control of t	Activity last ctive story as of 12	Birth Contro	_		2020	Comments		
Sexually Address of the Company of t	Activity last ctive story as of 12 s of 12/22/20	Birth Contro	bl	Partners —		Comments —		
Sexually Address of the conomic History	Activity last ctive story as of 12 s of 12/22/20	Birth Contro — 2/22/2020	bl	Partners —		Comments		
Sexually Address of the conomic History None	Activity last ctive story as of 12 s of 12/22/20 ational last re	Birth Contro — 2/22/2020 20 eviewed by Rile 2020	ey, Lillian R, M	Partners — MA on 2/12/20	020	Comments		
Sexually Address of the conomic History None	Activity last ctive story as of 12 s of 12/22/20 ational last re	Birth Contro — 2/22/2020 20 eviewed by Rile	ey, Lillian R, M	Partners — MA on 2/12/20	020	Comments		
Sexually Address of the conomic History None	Activity last ctive story as of 12 s of 12/22/20 ational last re	Birth Contro — 2/22/2020 20 eviewed by Rile 2020	ey, Lillian R, M	Partners — MA on 2/12/20	020	Ethnicity Not	Race Caucasia	Provider

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 12/22/2020

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 10/9/2019 Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 10/9/2019 Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 3/13/2019 Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 10/1/2019 End date: 6/1/2021 Informant: Family Member

Exelon 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.

Authorized by: Lai, Eugene C., MD Ordered on: 6/12/2020 Start date: 6/12/2020 End date: 3/15/2021 Quantity: 90 patch Refill: 1 refill by 6/12/2021

Eliquis 2.5 mg tablet

Instructions: TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.

Authorized by: Lai, Eugene C., MD Ordered on: 11/11/2020 End date: 2/9/2021 Start date: 11/11/2020 Quantity: 180 tablet Refill: No refills remaining



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 12/22/2020

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Authorized by: Lai, Eugene C., MD Ordered on: 11/11/2020 Start date: 11/11/2020 End date: 3/15/2021 Quantity: 540 tablet Refill: 3 refills by 11/11/2021

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME

Authorized by: Lai, Eugene C., MD Ordered on: 12/22/2020 Start date: 12/22/2020 End date: 2/20/2021 Quantity: 30 tablet Refill: 1 refill by 6/20/2021

Stopped in Visit

None

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

clonAZEPAM (KlonoPIN) 0.5 MG tablet [335306866] (Expired)

Electronically signed by: Lai, Eugene C., MD on 12/22/20 1608

Mode: Ordering in Verbal with readback mode Communicated by: Atassi, Farah Ordering user: Atassi, Farah 12/22/20 1430 Ordering provider: Lai, Eugene C., MD Authorized by: Lai, Eugene C., MD Ordering mode: Verbal with readback Frequency: 12/22/20 - 60 days Class: Print

Released by: Atassi, Farah 12/22/20 1430

Medication comments: This prescription was filled on 12/22/2020. Any refills authorized will be placed on file.

Order Details

Order Details

Priority	Expected	Study Status
	12/22/2020 2:30 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	60 days	None	Print

Order History

Outpatient

Status: Expired

Date/Time	Action Taken	User	Additional Information
12/22/20 1400	Pend	Interface, Surescripts In	
12/22/20 1430	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
12/22/20 1608	Verbal Cosign	Lai, Eugene C., MD	
02/02/21 0921	Taking Flag Checked	Pena, Flor, MA	

clonAZEPAM (KlonoPIN) 0.5 MG tablet [335306866] ENDED

Dose, Route, Frequency: As Directed

Dispense Quantity: 30 tablet Refills: 1

Note to Pharmacy: This prescription was filled on 12/22/2020. Any refills authorized will be placed on file.

Sig: TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME

End Date: 02/20/21 Start Date: 12/22/20



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 12/22/2020

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Written Date: 12/22/20 Expiration Date: 06/20/21

Providers

Ordering Provider and Authorizing Provider:

Lai, Eugene C., MD

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Atassi, Farah

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**

Medications - All Orders

clonAZEPAM (KlonoPIN) 0.5 MG tablet [335306866]

Electronically signed by: Lai, Eugene C., MD on 12/22/20 1608

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 12/22/20 1430 Authorized by: Lai, Eugene C., MD Frequency: 12/22/20 - 60 days

Released by: Atassi, Farah 12/22/20 1430

Communicated by: Atassi, Farah Ordering provider: Lai, Eugene C., MD Ordering mode: Verbal with readback

Class: Print

Medication comments: This prescription was filled on 12/22/2020. Any refills authorized will be placed on file.

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary**

Visit Information

Date & Time 12/22/2020 2:00 PM

Provider Lai, Eugene C., MD

Department HMNI Stanley H Appel Dept of Neurology

Encounter# 2100090665609 Status: Expired



Brockman, Robert T MRN: 003768603, DOB: Visit date: 12/22/2020

1941, Sex: M

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans

Prescription Record

Scan on 12/31/2020 9:49 AM: Clonazepam Refill 12/22/20

Scan (below)

Fax Call Report	HP LaserJet M	IFP M528	3	Page 1
	ype Line Identification end Analog 9/13/835482	Duration 00:45	Pages	Result Success
Houston Methodist HMNN Blanky H Appel Deal of Neurology Lai, Eugeno, G., MD Sopp FANNN ST BUTTE 802 PROPERTY TO ST	This section is intentionally blank.			
Pharmacy, BRIANGROVE PHARMACY - HOUSTON, TX - 8485 SAN FEILPE Phane 713-785-8704 Page 714-785-9482				

Dec/22/2020 3:34:52 PM

English (United States)

Brockman, Robert T MRN: 003768603, DOB: Visit date: 12/22/2020

1941, Sex: M

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

ax: 713-783-5482

Houston Methodist HMNI Stanley H Appel Dept of Neurology This section is intentionally blank. Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Date: Dec 22, 2020 This section is intentionally blank. Patient Name: MRN: 003768603 DOI 941 Robert T Brockman This section is intentionally blank. HOUSTON TX 77024 Phone number: 713-680-9635 RX: clonAZEPAM (KlonoPiN) 0.5 MG tablet
Sig: TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME
Route: Refill: **1 (One)** This section is intentionally blank. Route: Qty: **30 (Thirty) tablet** This section is intentionally blank. RXORDDATA(ORDCtrldMedTxStatu RXO(ORDCtrldMedTxStatus) Start On: Dec 22, 2020 Order ID: 335306866
EndingOn: Feb 20, 2021 Reprace #1568346
Comments: This prescription was filled on 12/22/2020. Any refills authorized will be placed on file. This section is intentionally blank. This section is intentionally blank. Signature:_____ NPI: 1790871002 DPS: V0069825 DEA: BL1509441 This section is intentionally blank. Pharmacy: BRIARGROVE PHARMACY - HOUSTON, TX - 6435 SAN FELIPE Phone: 713-783-5704



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 11/10/2020

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology

Visit Information

Contacts

	Туре	Contact	Phone	User
11/10/2020 11:04 AM CST	Interface (Incoming)	Briargrove Pharmacy - Houston, TX - 6435 San Felipe	713-783-5704	Interface, Surescripts In

Nursing Assessment

No Nursing Assessment available for this encounter.

Questionnaires

No completed forms available for this encounter.

Research Study Linked to Refill on 11/10/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 11/10/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Idiopathic peripheral neuropathy [last edited by Lai, Eugene C., MD on 2/21/2020 2038]

Diagnosis: Idiopathic peripheral

neuropathy

Noted on: 02/21/2020

Chronic: No

Mixed anxiety depressive disorder [last edited by Lai, Eugene C., MD on 2/21/2020 2037]

Diagnosis: Mixed anxiety depressive

disorder

Noted on: 02/21/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 11/10/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907 No Known Allergies

History as of 11/10/2020

Medical History as of 11/10/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Surgical History as of 11/10/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Family History as of 11/10/2020

Family History as of 11/10/2020

Brockman, Robert T MRN: 003768603, DOB: Visit date: 11/10/2020

1941, Sex: M

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

	s of 11/10/20	20						
Tobaco	o Use last re	viewed by Lai,	Eugene C., M	MD on 2/12/2	020			
Smoking S	tatus	Sr	noking Start	Date Sm	oking Quit Date	e Packs	s/Day	Years Used
Never Smol		_				_		_
Types		Co	omments		okeless Tobaco tus	Smok CO Tobac Date	eless cco Quit	Source
_		_		Nev	er Used	_		Provider
cohol Use as	of 11/10/202	0						
Alcoho	l Use last rev	viewed by Riley	y, Lillian R, M	A on 2/12/20	20			
Alcohol Us	ie .	Drinks/Wee	k	Alcohol/W	eek	Comments	3	Source
Never				_		_		Provider
ug Use as of	11/10/2020							
		wed by Riley, L	illian R, MA c	on 2/12/2020				
Drug Use		Types		Frequency		Comments	.	Source
Never						_		Provider
xual Activity			ilev I illian R	MA on 2/12	/2020			
	Activity last	2020 reviewed by R Birth Contro	-	, MA on 2/12 Partners	/2020	Comments	3	Source
Sexual	Activity last	reviewed by R	-		/2020	Comments —	3	
Sexually A Defer	Activity last	reviewed by R Birth Contro —	-		/2020	Comments —	S	
Sexual Sexually A	Activity last ctive story as of 11	Birth Contro	-		/2020	Comments —	S	
Sexually A Defer economic Hiscupational a	Activity last ctive story as of 11 s of 11/10/20	Birth Contro	DI .	Partners		Comments —	S	
Sexually A Defer economic History	Activity last ctive story as of 11 s of 11/10/20	Birth Contro — //10/2020	DI .	Partners		Comments —	3	
Sexually A Defer economic History ccupational a Occupational None	Activity last ctive story as of 11 s of 11/10/20 ational last re	Birth Contro — 1/10/2020 20 eviewed by Rile 2020	ey, Lillian R, I	Partners — MA on 2/12/2	2020	Comments	3	
Sexually A Defer economic History ccupational a Occupational None	Activity last ctive story as of 11 s of 11/10/20 ational last re	Birth Contro — //10/2020 20 eviewed by Rile	ey, Lillian R, I	Partners — MA on 2/12/2	2020	Comments	3	Source Provider
Sexually A Defer economic History ccupational a Occupational None	Activity last ctive story as of 11 s of 11/10/20 ational last re	Birth Contro — 1/10/2020 20 eviewed by Rile 2020	ey, Lillian R, I	Partners — MA on 2/12/2	2020	Comments	Race	

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020

Brockman, Robert T MRN: 003768603, DOB: Visit date: 11/10/2020

1941, Sex: M

Status: **Discontinued**

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

None

Medication List

Medication List

This visit is during an admission. Changes to the med list made in this visit will be reflected in the After Visit Summary of the admission.

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306865] (Discontinued)

Electronically signed by: Lai, Eugene C., MD on 11/11/20 0718

Ordering user: Lai, Eugene C., MD 11/11/20 0718

Authorized by: Lai, Eugene C., MD Frequency: 11/11/20 - 03/15/21

Released by: Lai, Eugene C., MD 11/11/20 0718

Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Discontinued by: Guandique, Zulma 03/15/21 1021 [Med List

Cleanup1

Medication comments: This prescription was filled on 11/10/2020. Any refills authorized will be placed on file.

Reordered from: carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Order Details

Order Details

Priority	Expected	Study Status
	11/11/2020 7:18 AM	

Order Details

Frequency	Duration	Priority	Order Class
None	None	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
11/10/20 1105	Pend	Interface, Surescripts In	
11/11/20 0718	Taking Flag Checked	Lai, Eugene C., MD	
11/11/20 0718	Sign	Lai, Eugene C., MD	Reorder from Order: 335306860
02/02/21 0921	Taking Flag Checked	Pena, Flor, MA	
03/15/21 0927	Order for Admission	Patel, Amitkumar Natvarlal, MD	To Order: 418718815
03/15/21 1021	Discontinue	Guandique, Zulma	Reason:Med List Cleanup

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306865] **DISCONTINUED**

Dose, Route, Frequency: As Directed

Dispense Quantity: 540 tablet Refills: 3

Note to Pharmacy: This prescription was filled on 11/10/2020. Any refills authorized will be placed on file.

Sig: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

End Date: 03/15/21 Start Date: 11/11/20 Discontinued by: Guandique, Zulma on 3/15/2021 10:21

Reason: Med List Cleanup

Brockman, Robert T MRN: 003768603, DOB: Visit date: 11/10/2020

1941, Sex: M

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Written Date: 11/11/20 Expiration Date: 11/11/21

Original Order: carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306860]

Providers

Ordering Provider and Authorizing Provider:

Lai, Eugene C., MD

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Eliquis 2.5 mg tablet [335306864] (Expired)

Electronically signed by: Lai, Eugene C., MD on 11/11/20 0718

Ordering user: Lai, Eugene C., MD 11/11/20 0718

Authorized by: Lai, Eugene C., MD

Frequency: 11/11/20 - 90 days Released by: Lai, Eugene C., MD 11/11/20 0718

Reordered from: Eliquis 2.5 mg tablet

Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Order Details

Order Details

Priority	Expected	Study Status
	11/11/2020 7:18 AM	

Order Details

Frequency	Duration	Priority	Order Class
None	90 days	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
11/10/20 1105	Pend	Interface, Surescripts In	
11/11/20 0718	Sign	Lai, Eugene C., MD	Reorder from Order: 335306862
11/11/20 0718	Taking Flag Checked	Lai, Eugene C., MD	
02/02/21 0921	Taking Flag Checked	Pena. Flor. MA	

Eliquis 2.5 mg tablet [335306864] ENDED

Dose, Route, Frequency: As Directed

Dispense Quantity: 180 tablet Refills: 0

Sig: TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.

Start Date: 11/11/20 End Date: 02/09/21 Written Date: 11/11/20 Expiration Date: 11/11/21

Original Order: Eliquis 2.5 mg tablet [335306862]

Providers

Status: Expired



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 11/10/2020

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Ordering Provider and Authorizing Provider:

Lai. Eugene C., MD

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**

Medications - All Orders

Eliquis 2.5 mg tablet [335306864]

Electronically signed by: Lai, Eugene C., MD on 11/11/20 0718

Ordering user: Lai, Eugene C., MD 11/11/20 0718

Authorized by: Lai, Eugene C., MD

Frequency: 11/11/20 - 90 days

Released by: Lai, Eugene C., MD 11/11/20 0718 Reordered from: Eliquis 2.5 mg tablet [335306862] Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Status: Discontinued

Status: Expired

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306865]

Electronically signed by: Lai, Eugene C., MD on 11/11/20 0718 Ordering user: Lai, Eugene C., MD 11/11/20 0718

Authorized by: Lai, Eugene C., MD

Frequency: 11/11/20 - 03/15/21

Released by: Lai, Eugene C., MD 11/11/20 0718

Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Discontinued by: Guandique, Zulma 03/15/21 1021 [Med List

Cleanupl

Medication comments: This prescription was filled on 11/10/2020. Any refills authorized will be placed on file.

Reordered from: carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306860]

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary**

Visit Information

Date & Time 11/10/2020 11:04 AM Provider Lai, Eugene C., MD Department

HMNI Stanley H Appel Dept of

Encounter # 2100088240549

Neurology



Brockman, Robert T MRN: 003768603, DOB: Visit date: 7/14/2020

1941, Sex: M

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology

Visit Information

•	 - 4 -
Coi	

	Туре	Contact	Phone	User
07/14/2020 12:10 PM	Interface	Briargrove Pharmacy -	713-783-5704	Interface, Surescripts In
CDT	(Incoming)	Houston, TX - 6435 San Felipe		

Nursing Assessment

No Nursing Assessment available for this encounter.

Questionnaires

No completed forms available for this encounter.

Research Study Linked to Refill on 7/14/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 7/14/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Idiopathic peripheral neuropathy [last edited by Lai, Eugene C., MD on 2/21/2020 2038]

Diagnosis: Idiopathic peripheral

neuropathy

Noted on: 02/21/2020

Chronic: No

Mixed anxiety depressive disorder [last edited by Lai, Eugene C., MD on 2/21/2020 2037]

Diagnosis: Mixed anxiety depressive

disorder

Noted on: 02/21/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 7/14/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907 No Known Allergies

History as of 7/14/2020

Medical History as of 7/14/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Surgical History as of 7/14/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Family History as of 7/14/2020

Family History as of 7/14/2020

Brockman, Robert T MRN: 003768603, DOB: Visit date: 7/14/2020

1941, Sex: M

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

bacco ose a	as of 7/14/2020								
Tobac	co Use last rev	viewed by Lai,	Eugene C., I	MD on 2/12/20)20				
Smoking S	Status	Sm	noking Start	Date Smo	king Quit Dat	te Pa	acks/Da	у	Years Used
Never Smo						_	-		_
				C	delesa Tabas	_	mokeles		
Types		Co	mments	Smo	keless Tobac		obacco		Source
					er Used		ate		Provider
cohol Use a	s of 7/14/2020								
Alcoh	ol Use last revi	ewed by Riley	, Lillian R, M	A on 2/12/202	20				
Alcohol U	se	Drinks/Week	(Alcohol/We	ek	Comm	ents		Source
Never				_		_			Provider
ug Use as o	f 7/14/2020								
	Use last review	ed by Piley I i	illian P MA c	n 2/12/2020					
Drug (ose last review	ed by Kliey, Li	illian ix, MA)11 2/ 12/2020					
Drug Hoo		Types Frequency Comments				_			
Drug Use		Types		Frequency		Comm	ents		Source
Never	y as of 7/14/202	20	lev. Lillian R		2020	— Comm	ents		Provider
Never exual Activity Sexua	I Activity last r	20 eviewed by Ri	-	, MA on 2/12/	2020				Provider
Never	I Activity last r	20	-		2020	Comm			
Never exual Activity Sexua Sexually A	I Activity last r	20 eviewed by Ri	-	, MA on 2/12/	2020				Provider Source
Never Sexual Activity Sexual Sexually A	I Activity last r	20 eviewed by Ri Birth Contro	-	, MA on 2/12/	2020				Provider Source
Never Exual Activity Sexual Sexually A Defer Deconomic H	Il Activity last r	20 eviewed by Ri Birth Contro	-	, MA on 2/12/	2020				Provider
Never Sexual Activity Sexually A Defer economic H	Il Activity last r Active	eviewed by Ri Birth Contro	ol .	, MA on 2/12/ Partners					Provider
Never Sexual Activity Sexually A Defer economic H	Active Listory as of 7/1 as of 7/14/2020	eviewed by Ri Birth Contro	ol .	, MA on 2/12/ Partners					Provider Source
Never Sexual Activity Sexually A Defer Deconomic H Coupational	Active Listory as of 7/1 as of 7/14/2020	eviewed by Ri Birth Contro	ol .	, MA on 2/12/ Partners					Provider
Never Sexual Activity Sexually A Defer economic H ccupational a Occup None	Active Listory as of 7/1 as of 7/14/2020 Dational last revisions of 7/14/20	eviewed by Ri Birth Contro 4/2020 viewed by Rile	y, Lillian R, I	, MA on 2/12/2 Partners — WA on 2/12/20	020				Provider
Never Sexual Activity Sexually A Defer economic H ccupational a Occup None	Active Active listory as of 7/1 as of 7/14/2020 pational last rev	eviewed by Ri Birth Contro 4/2020 viewed by Rile	y, Lillian R, I	, MA on 2/12/2 Partners — WA on 2/12/20	020				Provider
Never Sexual Activity Sexually A Defer Deconomic H Coupational a Occup None Ocioeconomic Socioe Marital	Active listory as of 7/1 as of 7/14/2020 pational last revision as of 7/14/20 economic last	eviewed by Ri Birth Contro 4/2020 viewed by Rile 20 reviewed by R	y, Lillian R, I iley, Lillian R	Partners WA on 2/12/20)20 /2020 Preferred	Comm	ents	2200	Source Provider
Never Sexual Activity Sexually A Defer Deconomic H Coupational a Occup None	Active listory as of 7/1 as of 7/14/2020 pational last reviic as of 7/14/20 economic last	eviewed by Ri Birth Contro 4/2020 viewed by Rile 20 reviewed by R	y, Lillian R, I	, MA on 2/12/20 Partners — MA on 2/12/20)20 //2020		ents	Race Caucasiar	Source Provider

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020



Brockman, Robert T MRN: 003768603, DOB: Visit date: 7/14/2020

1941, Sex: M

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020

Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 3/13/2019

Entered on: 1/8/2020
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA
Start date: 10/1/2019
Entered on: 1/8/2020
End date: 6/1/2021

Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Authorized by: Lai, Eugene C., MD

Start date: 3/12/2020

Quantity: 540 tablet

Ordered on: 3/12/2020

End date: 11/11/2020

Refill: 3 refills by 3/12/2021

Exelon 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.

Authorized by: Lai, Eugene C., MD

Start date: 6/12/2020

Quantity: 90 patch

Ordered on: 6/12/2020

End date: 3/15/2021

Refill: 1 refill by 6/12/2021



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 7/14/2020

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Eliquis 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Authorized by: Lai, Eugene C., MD

Start date: 7/14/2020

Quantity: 180 tablet

Ordered on: 7/14/2020

End date: 11/11/2020

Refill: No refills remaining

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Authorized by: Lai, Eugene C., MD

Start date: 7/14/2020

Quantity: 30 tablet

Ordered on: 7/14/2020

End date: 10/12/2020

Refill: 2 refills by 1/10/2021

Stopped in Visit

None

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

clonAZEPAM (KlonoPIN) 0.5 MG tablet [335306863] (Expired)

Electronically signed by: Lai, Eugene C., MD on 07/14/20 1350

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 07/14/20 1338 Authorized by: Lai, Eugene C., MD Frequency: Nightly 07/14/20 - 90 days Released by: Atassi, Farah 07/14/20 1338

Reordered from: clonAZEPAM (KlonoPIN) 0.5 MG tablet

Communicated by: Atassi, Farah Ordering provider: Lai, Eugene C., MD Ordering mode: Verbal with readback

Class: Print

Order Details

Order Details

Priority	Expected	Study Status
	7/14/2020 9:00 PM	

Order Details

Frequency	Duration	Priority	Order Class
at bedtime	90 days	None	Print

Order History

Outpatient

Status: Expired

Date/Time	Action Taken	User	Additional Information
07/14/20 1214	Pend	Interface, Surescripts In	
07/14/20 1338	Sign	Atassi, Farah	Reorder from Order: 320668809; Ordering Mode: Verbal with readback
07/14/20 1338	Taking Flag Checked	Atassi, Farah	
07/14/20 1350	Verbal Cosign	Lai, Eugene C., MD	

clonAZEPAM (KlonoPIN) 0.5 MG tablet [335306863] ENDED

Dose: **0.5 mg** Route: **oral** Frequency: **at bedtime**

Dispense Quantity: 30 tablet Refills: 2

Sig: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Start Date: 07/14/20 End Date: 10/12/20 after 90 doses

Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Status: Discontinued

Visit date: 7/14/2020

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Written Date: 07/14/20 Expiration Date: 01/10/21 Original Order: clonAZEPAM (KlonoPIN) 0.5 MG tablet [320668809]

Providers

Ordering Provider and Authorizing Provider:

Lai, Eugene C., MD

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Atassi, Farah

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Eliquis 2.5 mg tablet [335306862] (Discontinued)

Electronically signed by: Lai, Eugene C., MD on 07/14/20 1350

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 07/14/20 1338

Authorized by: Lai, Eugene C., MD Frequency: 07/14/20 - 11/11/20

Released by: Atassi, Farah 07/14/20 1338

Reordered from: apixaban (ELIQUIS) 2.5 mg tablet

Communicated by: Atassi, Farah Ordering provider: Lai, Eugene C., MD Ordering mode: Verbal with readback

Class: Normal

Discontinued by: Lai, Eugene C., MD 11/11/20 0718

Order Details

Order Details

Priority	Expected	Study Status
	7/14/2020 1:38 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	None	None	Normal

Order History Date/Time **Action Taken** User **Additional Information** 07/14/20 1210 Interface, Surescripts In Pend Reorder from Order: 320668813; Ordering 07/14/20 1338 Sign Atassi, Farah Mode: Verbal with readback 07/14/20 1338 Taking Flag Checked Atassi, Farah 07/14/20 1350 Verbal Cosign Lai, Eugene C., MD Lai, Eugene C., MD 11/10/20 1105 Reorder To Order: 335306864 11/11/20 0718 Discontinue Lai, Eugene C., MD

Eliquis 2.5 mg tablet [335306862] DISCONTINUED

Dose, Route, Frequency: As Directed

Dispense Quantity: 180 tablet Refills: 0

Sig: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Start Date: 07/14/20 End Date: 11/11/20 Outpatient



Brockman, Robert T MRN: 003768603, DOB: Visit date: 7/14/2020

1941, Sex: M

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Discontinued by: Lai, Eugene C., MD on 11/11/2020 07:18

Written Date: 07/14/20 Expiration Date: 07/14/21 Original Order: apixaban (ELIQUIS) 2.5 mg tablet [320668813]

Providers

Ordering Provider and Authorizing Provider:

Lai, Eugene C., MD

6560 FÄNNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Atassi, Farah

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology All Parent Orders

Medications - All Orders

Eliquis 2.5 mg tablet [335306862]

Electronically signed by: Lai, Eugene C., MD on 07/14/20 1350

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 07/14/20 1338

Authorized by: Lai, Eugene C., MD Frequency: 07/14/20 - 11/11/20

Released by: Atassi, Farah 07/14/20 1338

Reordered from: apixaban (ELIQUIS) 2.5 mg tablet [320668813]

Communicated by: Atassi, Farah Ordering provider: Lai, Eugene C., MD Ordering mode: Verbal with readback

Class: Normal

Discontinued by: Lai, Eugene C., MD 11/11/20 0718

clonAZEPAM (KlonoPIN) 0.5 MG tablet [335306863]

Electronically signed by: Lai, Eugene C., MD on 07/14/20 1350

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 07/14/20 1338 Authorized by: Lai, Eugene C., MD Frequency: Nightly 07/14/20 - 90 days

Released by: Atassi, Farah 07/14/20 1338

Reordered from: clonAZEPAM (KlonoPIN) 0.5 MG tablet [320668809]

Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback

Class: Print

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary

Visit Information

Date & Time Provider Department Encounter #
7/14/2020 12:10 PM Lai, Eugene C., MD HMNI Stanley H Appel Dept of 2100081613210

Generated by 1043159 at 6/2/21 3:28 PM

Page 58

Status: Expired

Status: Discontinued



Brockman, Robert T MRN: 003768603, DOB: Visit date: 7/14/2020

1941, Sex: M

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

Visit Information (continued)

Neurology

Brockman, Robert T MRN: 003768603, DOB: 1941, Sex: M Visit date: 7/14/2020

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary (continued)**

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans

Prescription Record

Scan on 7/14/2020 2:51 PM: Clonazepam Refill 07/14/20

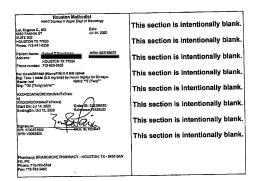
Scan (below)

HP Color LaserJet MFP M476dw

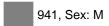
Fax Confirmation

Jul-14-2020 13:08

Result Identification Job Date Time Type Duration Pages 97137835482 1289 7/14/2020 13:07:33 Send 0:39 OK



Brockman, Robert T MRN: 003768603, DOB: Visit date: 7/14/2020



07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

Houston Methodist
HMNI Stanley H Appel Dept of Neurology This section is intentionally blank. Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Date: Jul 14, 2020 This section is intentionally blank. Patient Name: MRN: 003768603 This section is intentionally blank. HOUSTON TX 77024 Phone number: 713-680-9635 Rx: clonAZEPAM (KlonoPIN) 0.5 MG tablet This section is intentionally blank. Route: oral Children (Co.5 mg total) by mouth nightly for 90 days.

Route: oral Refill: **2 (Two)**

Qty: **30 (Thirty) tablet** This section is intentionally blank. RXORDDATA(ORDCtrldMedTxStatu RXO(ORDCtrldMedTxStatus) Start On: Jul 14, 2020 EndingOn: Oct 12, 2020 This section is intentionally blank. This section is intentionally blank. Signature:____ NPI: 1790871002 This section is intentionally blank. Pharmacy: BRIARGROVE PHARMACY - HOUSTON, TX - 6435 SAN FELIPE Phone: 713-783-5704 Fax: 713-783-5482



Brockman, Robert T MRN: 003768603, DOB

1941, Sex: M

Visit date: 6/12/2020

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology

Visit Information

Contacts

	Туре	Contact	Phone	User
06/12/2020 03:58 PM CDT	Interface (Incoming)	Briargrove Pharmacy - Houston, TX - 6435 San Felipe	713-783-5704	Interface, Surescripts In

Nursing Assessment

No Nursing Assessment available for this encounter.

Questionnaires

No completed forms available for this encounter.

Research Study Linked to Refill on 6/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 6/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Idiopathic peripheral neuropathy [last edited by Lai, Eugene C., MD on 2/21/2020 2038]

Diagnosis: Idiopathic peripheral

neuropathy

Noted on: 02/21/2020

Chronic: No

Mixed anxiety depressive disorder [last edited by Lai, Eugene C., MD on 2/21/2020 2037]

Diagnosis: Mixed anxiety depressive

disorder

Noted on: 02/21/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 6/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907 No Known Allergies

History as of 6/12/2020

Medical History as of 6/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Surgical History as of 6/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020

None

Family History as of 6/12/2020

Family History as of 6/12/2020

Brockman, Robert T MRN: 003768603, DOB: Visit date: 6/12/2020

1941, Sex: M

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

bacco osc c	as of 6/12/202	0						
Tobac	co Use last re	eviewed by Lai,	Eugene C., I	VID on 2/12/2	020			
Smoking S	Status	Sr	noking Start	Date Sm	oking Quit Dat	e Pack	s/Day	Years Used
Never Smo			noking Start	Date Jili	oking Quit Dat	e rack	3/Day	
Never offic	JKCI					Smol	keless	
				Sm	okeless Tobac	co Toba	cco Quit	
Types		Co	omments	Sta	tus	Date		Source
_		_		Nev	er Used	_		Provider
cohol Use as	s of 6/12/2020)						
Alcoho	ol Use last rev	viewed by Riley	, Lillian R, M	A on 2/12/20	20			
Alcohol U	se	Drinks/Wee	k	Alcohol/W	eek	Comment	s	Source
Never				_		_		Provider
ug Use as o	f 6/12/2020							
		wed by Riley, L	illian R, MA	on 2/12/2020				
Drug Use		Types		Frequency		Comment	S	Source
	y as of 6/12/20	020	elecc Lillian D	_	(0000	_		Provider
exual Activity Sexual	I Activity last	020 reviewed by R	-	, MA on 2/12	/2020	Comment		
exual Activity Sexua Sexually A	I Activity last	020	-	_	/2020	Comment	S	Source
exual Activity Sexual	I Activity last	020 reviewed by R	-	, MA on 2/12	/2020	Comment	s	
Sexual Activity Sexual Sexually A Defer economic H	I Activity last Active	D20 reviewed by Ri Birth Contro	-	, MA on 2/12	/2020	Comment	s	Source
Sexual Activity Sexual Sexually A Defer economic H	I Activity last	D20 reviewed by Ri Birth Contro	-	, MA on 2/12	/2020	Comment	s	Source
Sexual Activity Sexually A Defer economic H ccupational a	I Activity last Active istory as of 6/	D20 reviewed by Ri Birth Contro	bl	, MA on 2/12 Partners		Comment	S	Source
Sexual Activity Sexual Sexually A Defer economic H	I Activity last Active istory as of 6/	D20 reviewed by Ri Birth Contro (12/2020	bl	, MA on 2/12 Partners		Comment	s	Source
Sexual Activity Sexually A Defer economic H ccupational a Occup	I Activity last Active istory as of 6/	D20 reviewed by Rice Birth Contro — (12/2020	bl	, MA on 2/12 Partners		Comment	S	Source
Sexual Activity Sexually A Defer economic H ecupational a Occup None	I Activity last Active istory as of 6/ as of 6/12/202 pational last re	D20 reviewed by Rice Birth Contro — (12/2020	ey, Lillian R, I	, MA on 2/12 Partners — MA on 2/12/2	020	Comment	S	Source
Sexual Activity Sexually A Defer economic H ecupational a Occup None	I Activity last Active istory as of 6/ as of 6/12/202 pational last re	D20 reviewed by Rice Birth Contro 12/2020 20 eviewed by Rile	ey, Lillian R, I	, MA on 2/12 Partners — MA on 2/12/2	020	Comment	s Race	Source



Brockman, Robert T MRN: 003768603, DOB: Visit date: 6/12/2020

1941, Sex: M

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020

Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 3/13/2019

Entered on: 1/8/2020
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA
Start date: 10/1/2019
Entered on: 1/8/2020
End date: 6/1/2021

Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Authorized by: Lai, Eugene C., MD

Start date: 1/8/2020

Quantity: 30 tablet

Ordered on: 1/8/2020

End date: 7/14/2020

Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Authorized by: Lai, Eugene C., MD

Ordered on: 2/12/2020

Start date: 2/12/2020

Quantity: 180 tablet

Ordered on: 2/12/2020

End date: 7/14/2020

Refill: 3 refills by 2/11/2021



Brockman, Robert T MRN: 003768603, DOB: Visit date: 6/12/2020

1941, Sex: M

Status: Discontinued

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Authorized by: Lai, Eugene C., MD

Start date: 3/12/2020

Quantity: 540 tablet

Ordered on: 3/12/2020

End date: 11/11/2020

Refill: 3 refills by 3/12/2021

Exelon 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.

Authorized by: Lai, Eugene C., MD

Start date: 6/12/2020

Quantity: 90 patch

Ordered on: 6/12/2020

End date: 3/15/2021

Refill: 1 refill by 6/12/2021

Stopped in Visit

None

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

Exelon 9.5 mg/24 hr [335306861] (Discontinued)

Electronically signed by: Lai, Eugene C., MD on 06/12/20 1626

Ordering user: Lai, Eugene C., MD 06/12/20 1626 Ordering provider: Lai, Eugene C., MD

Authorized by: Lai, Eugene C., MD Ordering mode: Standard

Frequency: 06/12/20 - 03/15/21 Class: Normal

Released by: Lai, Eugene C., MD 06/12/20 1626

Discontinued by: Guandique, Zulma 03/15/21 1021 [Med List

Cleanup]

Medication comments: This prescription was filled on 6/12/2020. Any refills authorized will be placed on file.

Reordered from: rivastigmine (EXELON) 9.5 mg/24 hr

Order Details

Order Details

Priority	Expected	Study Status
	6/12/2020 4:26 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	None	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
06/12/20 1558	Pend	Interface, Surescripts In	
06/12/20 1626	Sign	Lai, Eugene C., MD	Reorder from Order: 320668814
06/12/20 1626	Taking Flag Checked	Lai, Eugene C., MD	
02/02/21 0921	Taking Flag Checked	Pena, Flor, MA	
03/15/21 0927	Order for Admission	Patel, Amitkumar Natvarlal, MD	To Order: 418718816
03/15/21 1021	Discontinue	Guandique, Zulma	Reason:Med List Cleanup

Exelon 9.5 mg/24 hr [335306861] DISCONTINUED

Dose, Route, Frequency: As Directed

Dispense Quantity: 90 patch Refills: 1

Note to Pharmacy: This prescription was filled on 6/12/2020. Any refills authorized will be placed on file.



Brockman, Robert T MRN: 003768603, DOB: Visit date: 6/12/2020

1941, Sex: M

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Sig: Place 1 patch on the skin daily.

Start Date: 06/12/20 End Date: 03/15/21 Discontinued by: Guandique, Zulma on 3/15/2021 10:21

Reason: Med List Cleanup

Written Date: 06/12/20 Expiration Date: 06/12/21 Original Order: rivastigmine (EXELON) 9.5 mg/24 hr [320668814]

Providers

Ordering Provider and Authorizing Provider:

Lai, Eugene C., MD

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe 6435 San Felipe, Houston TX 77057

Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**

Medications - All Orders

Exelon 9.5 mg/24 hr [335306861]

Electronically signed by: Lai, Eugene C., MD on 06/12/20 1626

Ordering user: Lai, Eugene C., MD 06/12/20 1626

Authorized by: Lai, Eugene C., MD Frequency: 06/12/20 - 03/15/21

Released by: Lai, Eugene C., MD 06/12/20 1626

Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Discontinued by: Guandique, Zulma 03/15/21 1021 [Med List

Cleanup]

Medication comments: This prescription was filled on 6/12/2020. Any refills authorized will be placed on file.

Reordered from: rivastigmine (EXELON) 9.5 mg/24 hr [320668814]

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary**

Visit Information

Date & Time Provider Encounter # Department HMNI Stanley H Appel Dept of 6/12/2020 3:58 PM Lai, Eugene C., MD

Neurology

2100079992827

Status: Discontinued



Brockman, Robert T MRN: 003768603, DOB: Visit date: 3/12/2020

1941, Sex: M

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology

Visit Information

^ -	4	-4-
Co	nta	CIS

	Туре	Contact	Phone	User
03/12/2020 10:06 AM	Interface	Briargrove Pharmacy -	713-783-5704	Interface, Surescripts In
CDT	(Incoming)	Houston, TX - 6435 San Felipe		

Nursing Assessment

No Nursing Assessment available for this encounter.

Questionnaires

No completed forms available for this encounter.

Research Study Linked to Refill on 3/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 3/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Idiopathic peripheral neuropathy [last edited by Lai, Eugene C., MD on 2/21/2020 2038]

Diagnosis: Idiopathic peripheral

neuropathy

Noted on: 02/21/2020

Chronic: No

Mixed anxiety depressive disorder [last edited by Lai, Eugene C., MD on 2/21/2020 2037]

Diagnosis: Mixed anxiety depressive

disorder

Noted on: 02/21/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 3/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907 No Known Allergies

History as of 3/12/2020

Medical History as of 3/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Surgical History as of 3/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Family History as of 3/12/2020

Family History as of 3/12/2020

Brockman, Robert T MRN: 003768603, DOB: Visit date: 3/12/2020

1941, Sex: M

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

	uality History	as of 3/12/2020						
Tobacco Use	as of 3/12/202	0						
Tobac	co Use last re	eviewed by Lai,	Eugene C., M	D on 2/12/20	20			
Smoking		Sr	moking Start D	ate Smo	king Quit Date	Packs/	'Day	Years Used
Never Sm	oker			_		_		_
Types		Ce	omments	Smo Stati	keless Tobacco	Smoke Tobace Date	co Quit	Source
				Neve	er Used	_		Provider
Alcohol Use a		viewed by Riley	, Lillian D. MA	on 2/12/202	0			
Alcon	oi ose iasi rev	newed by Kile	, Lillian K, IVIF	(OII <i>21</i> 12/202	.0			
Alcohol U	se	Drinks/Wee	k	Alcohol/We	ek (Comments		Source
Never				_	-	_		Provider
Drug Hoo oo a								
Drug Use as o		wed by Riley, L	illian P MA o	2/12/2020				
Drug	JSC IdSL ICVIC	wed by Kiley, L	illiali K, MA O	1 2/12/2020				
Drug Use		Types		Frequency	(Comments		Source
Never				_	-	_		Provider
	I Activity last	reviewed by R						Source
Sexually A	Active	Birth Contro	DI .	Partners		Comments		Source
Dofor								Drovidor
Defer				_	_	_		Provider
Defer	l istory as of 3/	12/2020		_	_	_		Provider
					_			Provider
cioeconomic H	as of 3/12/202		ey, Lillian R, M	— A on 2/12/20	20			Provider
cioeconomic H Occupational Occup	as of 3/12/202 pational last re	0 eviewed by Rile	ey, Lillian R, M	A on 2/12/20	20			Provider
Cioeconomic H Occupational Occup None Socioeconom	as of 3/12/202 pational last re	0 eviewed by Rile						Provider
Cioeconomic H Occupational Occup None Socioeconom	as of 3/12/202 pational last re	0 eviewed by Rile 020			2020 Preferred	Ethnicity	Race	Provider

Social Documentation History as of 3/12/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020



Brockman, Robert T MRN: 003768603, DOB: Visit date: 3/12/2020

1941, Sex: M

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020

Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 3/13/2019

Entered on: 1/8/2020
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA
Start date: 10/1/2019
End date: 6/1/2021

Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Authorized by: Lai, Eugene C., MD

Start date: 1/8/2020

Quantity: 30 tablet

Ordered on: 1/8/2020

End date: 7/14/2020

Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Authorized by: Lai, Eugene C., MD

Ordered on: 2/12/2020

Start date: 2/12/2020

Quantity: 180 tablet

Ordered on: 2/12/2020

End date: 7/14/2020

Refill: 3 refills by 2/11/2021



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Status: Discontinued

Visit date: 3/12/2020

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

rivastigmine (EXELON) 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.

Authorized by: Lai, Eugene C., MD Ordered on: 2/12/2020 Start date: 2/12/2020 End date: 6/12/2020 Quantity: 90 patch Refill: 3 refills by 2/11/2021

carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Ordered on: 3/12/2020 Authorized by: Lai, Eugene C., MD Start date: 3/12/2020 End date: 11/11/2020 Quantity: 540 tablet Refill: 3 refills by 3/12/2021

Stopped in Visit

None

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306860] (Discontinued)

Electronically signed by: Lai, Eugene C., MD on 03/12/20 1244

Ordering user: Lai, Eugene C., MD 03/12/20 1244 Ordering provider: Lai, Eugene C., MD

Authorized by: Lai, Eugene C., MD Ordering mode: Standard

Frequency: 03/12/20 - 11/11/20 Class: Normal

Released by: Lai, Eugene C., MD 03/12/20 1244 Discontinued by: Lai, Eugene C., MD 11/11/20 0718

Reordered from: carbidopa-levodopa (SINEMET) 25-100 mg per tablet Order Details

Order Details

Priority	Expected	Study Status		
	3/12/2020 12:44 PM			

Order Details

Frequency	Duration	Priority	Order Class
None	None	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
03/12/20 1006	Pend	Interface, Surescripts In	
03/12/20 1244	Sign	Lai, Eugene C., MD	Reorder from Order: 9125748
03/12/20 1244	Taking Flag Checked	Lai, Eugene C., MD	
11/10/20 1105	Reorder	Lai, Eugene C., MD	To Order: 335306865
11/11/20 0718	Discontinue	Lai Eugene C MD	

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306860] DISCONTINUED

Dose, Route, Frequency: As Directed

Dispense Quantity: 540 tablet Refills: 3

Sig: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Start Date: 03/12/20 End Date: 11/11/20



Brockman, Robert T MRN: 003768603, DOB: Visit date: 3/12/2020

1941, Sex: M

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Discontinued by: Lai, Eugene C., MD on 11/11/2020 07:18

Written Date: 03/12/20 Expiration Date: 03/12/21

Original Order: carbidopa-levodopa (SINEMET) 25-100 mg per tablet [9125748]

Providers

Ordering Provider and Authorizing Provider:

Lai, Eugene C., MD

6560 FÄNNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**

Medications - All Orders

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306860]

Electronically signed by: Lai, Eugene C., MD on 03/12/20 1244

Ordering user: Lai, Eugene C., MD 03/12/20 1244 Ordering provider: Lai, Eugene C., MD

Authorized by: Lai, Eugene C., MD Ordering mode: Standard Class: Normal

Frequency: 03/12/20 - 11/11/20

Released by: Lai, Eugene C., MD 03/12/20 1244 Discontinued by: Lai, Eugene C., MD 11/11/20 0718

Reordered from: carbidopa-levodopa (SINEMET) 25-100 mg per tablet [9125748]

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary**

Visit Information

Department Date & Time Provider Encounter # 3/12/2020 10:06 AM Lai, Eugene C., MD HMNI Stanley H Appel Dept of 2100076263215

Neurology

Status: Discontinued

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

941, Sex: M

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Atassi, Farah

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of	6560 Fannin Street Suite 802	713-441-3780	713-790-5079
Neurology	Houston TX 77030-2725		

Research Study Linked to Documentation on 2/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 2/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907 No Known Allergies

History as of 2/12/2020

Medical History as of 2/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020

Surgical History as of 2/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Family History as of 2/12/2020

Family History as of 2/12/2020

Substance & Sexuality History as of 2/12/2020

Tobacco Use as of 2/12/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco	Smokeless	Source



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Alcohol Use Never ug Use as of 2/12/202 Drug Use last re Drug Use Never exual Activity as of 2/2 Sexual Activity Sexually Active Defer	Drinks/Week 20 eviewed by Riley, Lil Types —	llian R, MA o	n 2/12/2020 Frequency) ek	Comments Comments Comments	Prov	Source Provider Source Provider
Alcohol Use last Alcohol Use Never ug Use as of 2/12/202 Drug Use last re Drug Use Never xual Activity as of 2/2 Sexual Activity Sexually Active Defer	Drinks/Week Drinks/Week Orinks/Week Orinks/Week Orinks/Week Orinks/Week Orinks/Week Orinks/Week Orinks/Week Orinks/Week	llian R, MA o	n 2/12/2020 Frequency MA on 2/12/2	ek	Comments		Source Provider
Alcohol Use Never ug Use as of 2/12/202 Drug Use last re Drug Use Never exual Activity as of 2/2 Sexual Activity Sexually Active	Drinks/Week 20 eviewed by Riley, Lil Types — 12/2020 last reviewed by Rile	llian R, MA o	n 2/12/2020 Frequency MA on 2/12/2	ek	Comments		Source Provider
Never ug Use as of 2/12/202 Drug Use last re Drug Use Never exual Activity as of 2/ Sexual Activity Sexually Active Defer	20 eviewed by Riley, Lil Types — 12/2020 last reviewed by Ril	llian R, MA o	n 2/12/2020 Frequency — MA on 2/12/2		Comments		Source Provider
ug Use as of 2/12/202 Drug Use last re Drug Use Never Exual Activity as of 2/2 Sexual Activity Sexually Active Defer Deconomic History as	Types Types 12/2020 last reviewed by Rile	ey, Lillian R,	Frequency — MA on 2/12/2	020	_		Source Provider
Drug Use last ro Drug Use Never Exual Activity as of 2/ Sexual Activity Sexually Active Defer Deconomic History as	Types Types 12/2020 last reviewed by Rile	ey, Lillian R,	Frequency — MA on 2/12/2	020	_		Provider Source
Drug Use Never Exual Activity as of 2/ Sexual Activity Sexually Active Defer Deconomic History as	Types — 12/2020 last reviewed by Ril	ey, Lillian R,	Frequency — MA on 2/12/2	020	_		Provider Source
Never Exual Activity as of 2/ Sexual Activity Sexually Active Defer Deconomic History as	— 12/2020 last reviewed by Ril	_	MA on 2/12/2	020	_		Provider Source
Never xual Activity as of 2/ Sexual Activity Sexually Active Defer Deconomic History as	— 12/2020 last reviewed by Ril	_	MA on 2/12/2	020	Comments		Source
Sexually Active Defer Deconomic History as	last reviewed by Ril	_		020	Comments		
Sexually Active Defer Deconomic History as	last reviewed by Ril	_		020	Comments		
Sexually Active Defer Deconomic History as		_			Comments		
Defer Deconomic History as	— Birth Control		Partners		Comments		
oeconomic History as	_		_				Provider
-							riovidei
ccupational as of 2/1	s of 2/12/2020						
	2/2020						
Occupational I None	last reviewed by Rile	y, Lillian R,	MA on 2/12/20)20			
ocioeconomic as of 2	2/12/2020						
	ic last reviewed by R	iley, Lillian F	R, MA on 2/12	/2020			
Marital Spou		Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married —	_	_	_	English	Not Hispanic or Latino	Caucasian	_
al Documentation His	story as of 2/12/2020						

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/12/2020

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 10/9/2019 Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 10/9/2019 End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 10/9/2019 Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 3/13/2019 Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020 Start date: 10/1/2019 End date: 6/1/2021 Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Authorized by: Lai, Eugene C., MD Ordered on: 1/8/2020 Start date: 1/8/2020 End date: 7/14/2020 Quantity: 30 tablet Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Authorized by: Lai, Eugene C., MD Ordered on: 2/12/2020 Start date: 2/12/2020 End date: 7/14/2020 Quantity: 180 tablet Refill: 3 refills by 2/11/2021

rivastigmine (EXELON) 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.

Authorized by: Lai, Eugene C., MD Ordered on: 2/12/2020 Start date: 2/12/2020 End date: 6/12/2020 Quantity: 90 patch Refill: 3 refills by 2/11/2021



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Stopped in Visit

None

Progress Notes

Progress Notes

Atassi, Farah at 2/12/2020 1455

Author: Atassi, Farah Filed: 2/12/2020 3:06 PM

Status: Signed

Service: — Encounter Date: 2/12/2020

Editor: Atassi, Farah (Clinical Trials Mgr)

Author Type: Clinical Trials Mgr Creation Time: 2/12/2020 2:55 PM

Robert T Brockman was approached to participate in Biological Markers for Nervous System Immune and Free Radical-Mediated Processes in Amyotrophic Lateral Sclerosis

Study -Parkinson's disease subtype. The details of the study were explained including all the contents of the informed consent. The participant was provided a copy of the current, IRB approved, informed consent form to read. Ample time was provided in a quiet location for the participant to read the form and ask questions. Questions and concerns were addressed to meet their satisfaction and understanding. He demonstrated understanding that this is a research study, and their participation was voluntary and revocable at any time. He indicated that they would like to participate in the study, and the form was signed without alteration by Robert T Brockman on 02/12/2020. A copy of the signed consent form was provided. No study procedures were performed prior to signing of the consent form. We are able to draw one green tube only. He states that we will repeat to draw his blood in the next visit and he will drink a lot of fluid before the visit. I

Note Electronically Signed by Farah Atassi.

Electronically signed by Atassi, Farah at 2/12/2020 3:06 PM

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**

All Orders

No orders found

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary**

Visit Information

Date & Time 2/12/2020 2:55 PM Provider Atassi, Farah

Department HMNI Stanley H Appel Dept of Neurology

Encounter # 2100075002592



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans

Research Consent Form

Scan on 2/12/2020 3:13 PM: PD immune study consent and informed concent process documentation 02/12/2020

Scan (below)

	tho	list			MRN:003768603 CSN:2100073097942	
	RESEARCH I			RTD	Brockman, Robert T	
Study Partici	pant Identifier	: PP_039	Study Name/Identifier:	1/1/	MCM 1941 (78 yrs) Appt. Date:1/88/20 Eugene C. Lai	EME.
		Informed Cor	sent Process Docur	nentation	Eugene C. Lai	
Please indica	ate " <u>yes" or</u>	"no" by each line as a	ppropriate <u>(if no, you mus</u>	st explain in th	e notes section below):	
ØYes □ N	o: Study Pa	rticipant &/or LAR w	as given a copy of the Ir	formed Cons	ent Form (ICF) to read.	ļ
ØYes □ N	lo: Ample tir	me was given to the st	udy participant to read	and ask ques	tions.	Ī
Ø Yes □ N	lo: All quest	ions and concerns we	re addressed prior to pa	rticipant sign	ing consent form.	į
Ø Yes □ N	io: A copy of	f the signed consent fo	orm was provided to the	study partic	pant &/or LAR.	1
Yes □ N	lo: No study	procedures were per	formed prior to signing	of the consen	t form.	
PYes 🗆 N		he signed ICF & Reser g in the chart (to be sca	arch Notification Form vanned to the EMR)	w/patient ID l	abel affixed on docume	ents
ticipate in the stu ormed consent for resentative). A coned copy was give ocution of the conse	ndy. The studem document wopy of the information to the patient.	y participant demonstr was signed without alte rmed consent form docu tt/study participant. No	informed consent docum ated understanding that ration by the patient/stud ument was placed in the p activities specifically relat resentative signed inform	this is a resea y participant (atient/study pa ted to the resea	rch study. The IRB-appi or patient's legally autho rticipant-specific record, rch were started until aft	roved rized and a er the
ed on the ICF doc	ument)	SION Con_	02 107/2019	ied consent d	scument version. Numb	er (as
Furth A	tani		,	7 12 E Date	020	
	Iwa	able to 120	w only onet	ube, pt	said the we	
mments/Notes:-	A 10 - 4"	, + H- 101 00	1-12-			
mments/Notes:-	un repe	at the plan	1 Prom rest	risit an	he will make	<u></u>
Per Subject, Mi			indicated that the follo	owing perso	he Will make Will d VinKa k n(s) may be	S-nK
Per Subject, Mi		has ing their research in	indicated that the follo	owing perso	by Will Make Will I Vinka k n(s) may be ts (e.g. (A) only appt notific	Sur Toll
Per Subject, Mi			indicated that the follo	Commer or remind	n(s) may be	d
Per Subject, Mi ommunicated		ing their research in	indicated that the follo volvement:	Commer or remind	n(s) may be ' ts (e.g. (A) only appt notifice ers w/ minimal or no detaile ations <u>OR</u> (B) okay to have	d

Version 5/2014

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

941, Sex: M

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)



We are asking you to consent to participation in a research study. Your participation is voluntary.

This is a research study to find out if your Parkinson's Disease involves immune cells from your body in similar manner to those that have been found in patients with ALS. You will be asked to give samples of your blood, urine and spinal fluid (if you are having a spinal tap as part of your regular treatment). You would be asked to donate between 30-70 ml (less than 5 tablespoons) of blood while you are at your regularly scheduled clinic visit.

There, are risks to being in this study that are described in this document. the blood draw or loss of confidentiality if computer security is compromis you for participating in the study although you may feel good that you are this disease and others.	sed. There is no physical benefit to helping the scientist to understand
if you are interested in learning more about this study, please continue rea	ading below.
his is a creed of section in section as the section of the section is self-terminal to the section of the section of the section is self-terminal to the section of the sec	रिक्रिया । इ.स. १५८५ वर्ष
Informed Consent for Participation in Resear	rch
Participant's Name: Robert T. BrockmapSubject ID N	Number: <u>PD 039</u>
Official Study Title: BIOLOGICAL MARKERS FOR NERVOUS S' FREE RADICAL-MEDIATED PROCESSES IN AMYOTROPHIC L (ALS) Substudy - Parkinson's Disease	
Principal Investigator: Stanley H. Appel, MD	
Before consenting to participate in this research study, you should ha information in this form, or have it read to you. A member of the rewith you. Be sure to ask questions about anything that is not clear before the contract of the cont	search team will discuss it
You can choose not to participate at any time, even after starting the studoss of benefits to which you are entitled.	udy, without any penalty or
You will have procedures done that are considered research and may ousual care for you condition. If you decide to participate, your private collected; however the researchers in this study will take appropriate n confidentiality of your information. In the case you are injured as a res	health information will be neasures to ensure
treatment is available.	MRN:003768603
FOR IRB OFFICE USE ONLY (Do not alter or modify in any way)	CSN:2100073097942
Pro No. Pro00001058 Page 1 of 7	
Consent Approval Date: 02/07/2019 Consent Version: 1 Main ICF template v. December 2017	Brockman, Robert T MCM 1941 (78 yrs) Appt. Date: 1/08/20 Eugene C. Lai

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

If you go to Houston Methodist or another healthcare facility or provider for any reason while participating in this study, you should inform them that you are involved in this research study, as it may impact the type(s) of care provided and protect your safety.

Why me: You are being asked to participate in a research study because you have been diagnosed with Parkinson's Disease (PD).

Study Summary: To collect T-regulatory cells (special cells from your immune system) from your blood. These cells may have an effect on the course of a disease called Amyotrophic Lateral Sclerosis (ALS) and may be involved with your Parkinson's Disease. Through your participation in another part (called an "arm") of this study, the investigator would like to conduct additional studies.

The purpose of this study is to study your blood, urine or spinal fluid (if you have a spinal tap as part of your clinical treatment).

This study will be a collection of body fluids to test for responses by your immune system through examining T-regulatory cells, their function and other component of your cellular system.

Study Susaments to collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the collect T-regulatory colls (special colls from your income of the colls from your income of the collect T-regulatory colls (special colls from your income) colls (spec

What other choices do I have?

All research is voluntary and you have the choice to not participate.

What extra test and procedures will I have if I take part in the study?

The only tests or procedures that you will have if you participate are blood draws or urine samples requested when you come for your office visit. If your doctor determines that it is in your best interest to undergo a procedure called a spinal tap, we would request that you permit any extra fluid, not used for testing, to be used in our laboratory

What risks will I face by taking part in the study and how will Researchers protect me from these risks?

Some risks include: bruising from the blood draw or loss of confidentiality if computer security is compromised. There is no physical benefit to you for participating in the study although you may feel good that you are helping the scientist to understand this disease and others.

As with any research study, there may be additional risks that are unknown or unexpected. If these become known, the study team will notify you in a timely manner of any changes that may change your willingness to participate. If new information is provided to you after you have joined the study, it is possible that you may be asked to sign a new consent form that includes the new information.

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1941, Sex: M

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

The researchers have taken steps to minimize the risks of this study. Blood will only be drawn by skilled medical personnel under properly sanitary conditions. Loss of confidentiality is taken very seriously at our institution and we strive to protect your personal data by having limited access to documents and all computers are password protected. Your samples will be given a code number so that they will not be identifiable once they leave the doctor's office.

Please tell the researchers in the contact section about any injuries, side effects, or other problems that you have during this study. You should also tell your regular doctors.

How could I and others benefit if I take part in this study?

This study may help us learn things that may help people in the future but will not be of help to you and your current medical condition.

What is the cost of participating in this study?

The study will cover the cost of the blood draw if you are not having other blood work done for your clinical treatment! To avoid having more than one blood draw done, we will make every attempt possible to have blood for this study drawn at the same time you are tested for your clinical care. The architecture of the study drawn at the same time you are tested for your clinical care. The architecture is a section of the study drawn at the same time you are tested for your clinical care. The architecture is a section of the study drawn at the same time you are tested for your clinical care.

The cost of your usual blood tests or if a spinal tap is required by your treating physician will be your /your insurance company's responsibility. The solutions

You will be responsible for your normal co-payments and co-insurance/deductibles.

If you have questions about the cost of participation, ask for more information before deciding to participate in the study.

Will I be paid for participating in this study?

You will not be paid for taking part in the study.

Who could profit or financially benefit from the study results?

If commercial products or other valuable discoveries result from this research project, these products and discoveries could be patented, licensed, or otherwise developed for commercial sale by Houston Methodist or the study Sponsor or their respective designees. If this should occur, there are no plans to provide financial compensation to you. There are no plans for you to share in the patent rights, other ownership rights, or rights to control the commercial products and discoveries that may result from this research project.

If I take part in this study, can I also participate in other studies?

Being in more than one research study at the same time, or even at different times, may increase the risks to you. It may also affect the results of the studies. You should not take part in more than one study without approval from the researchers involved in each study.

If I want to stop participating in the study, what should I do?

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Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

If you wish to stop your participation in this research study for any reason you should let the principal investigator/study coordinator know as soon as possible so that you can stop safely. You may be asked why you are leaving the study and your reasons for leaving may be kept as part of the study record. If you decide to leave the study before it is finished, please tell one of the persons listed in "Contact Information".

Could the researchers take me out of the study even if I want to continue to participate?

The researchers could remove you from the study if:

- The researcher believes that it is not in your best interest to stay in the study.
- ✓ You become ineligible to participate.
- \checkmark Your condition changes and you need treatment that is not allowed while you are taking ' part in the study.
- You do not follow instructions from the researchers.
 Y The study is suspended or canceled.
- If you are taken out of active participation, ongoing follow-up may continue.

What happens if I get hurt, my condition worsens, or have other problems as a result of this research?

If you are injured as a direct result of this study, medical care is available. In general, no long-term medical care or financial compensation for research-related injuries will be provided by Houston Methodist, You do not waive (give up) any legal rights by signing this informed consent form.

What information about me could be seen by the researchers or by other people? Why? Who might see it? How will it be protected?

Release of Health Information - If you decide to participate in this study, information about your health may be used or disclosed (shared outside of the Hospital) for the purposes of conducting this study. This information may include information from your medical record that is relevant to this study, such as your medical history, medications, test results, diagnoses, treatments, operative reports (reports from operations that you have undergone), and discharge summaries. It may also include information relating to: Human Immunodeficiency Virus ("HIV") infection or Acquired Immunodeficiency Syndrome ("AIDS"); treatment for or history of drug or alcohol abuse; or mental or behavioral health or psychiatric care. Information collected by the study doctor and/or research staff specifically for this study, such as test results, blood samples, physical examinations, information about possible side effects, and surveys you might be asked to complete could also be used or disclosed.

Individuals that may use or release this information include: physicians, physicians' office staff, hospital staff, the study doctor, and authorized members of the study doctor's research staff. These individuals may release this information to the study doctor, authorized members of the study doctor's staff, as well other researchers, the Institutional Review Board (IRB), the United States Food and Drug Administration (FDA) and its representatives, and other government agencies.

In most cases, the information released to the above listed individuals or entities will not contain your name, social security number, or any other personal information. However, authorized representatives of your study doctor, IRB, FDA, or other government agencies may review records

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02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

containing personal information to make sure that the study information is correct. Because of the need to provide information to these parties, absolute confidentiality cannot be guaranteed.

Use of Information - This information may be used to determine whether you meet all requirements for participation in the study, to monitor your healthcare during the study, to enable the sponsor to answer the scientific questions for which the study was designed, and to ensure that the study has been done properly. Examples of the use of this information are as follows: the sponsor may use the information in submissions to government agencies throughout the world, to request approval of the study drug or device; the sponsor may use the information for reporting adverse events to government agencies, such as the FDA; the sponsor may also transfer the information to business partners or companies it hires to provide study-related services; the sponsor may also provide overall study results, including your information, to other study doctors; and the sponsor may reanalyze the data from this study in the future or combine it with data from other studies for analysis. In addition, both the sponsor and the study doctor may use the information to prepare reports or publications of the study results. However, when results of the research study are reported in medical journals or at scientific meetings, the people who were in the study are not named and identified. Therefore, your names would not be disclosed in any presentation of publication open as ample, of the mession this entone, for the contract of You need to understand that once your information has been released, it may no longer be protected by US federal regulations relating to data privacy and could be used or re-disclosed in ways other than those listed in this section of the consent form.

You have the right to see and copy your medical records but information relating to this study may be withheld until the end of this study.

What happens to information about me after the study is over or if I cancel my permission?

If you stop participating in this study, you also have the right to revoke (withdraw) your authorization to disclose and use your information. Revoking your authorization means taking back the permission you gave the study doctor to send information about you to the sponsor or other people and entities. If you revoke your authorization, your doctor will not use or release any more information about you after receiving your request, except to tell the sponsor that you have stopped early and have revoked your authorization. However, the sponsor and the study doctor can still keep and use any information that it has already received to the extent necessary to preserve the integrity of the research study. To revoke this authorization, contact the research team. The research team will accept either a written or verbal request.

When does my permission expire?

Because this information is being disclosed for research use, there is no expiration date for the authorization to disclose and use this information. The sponsor may keep and continue to use your study information for many years. Your study doctor may need to add to or correct information about you even after your study participation is over; including providing updates of your health status if that is important to the purpose of the study. The review of your medical records may also take place after the study is over. This authorization will remain in effect unless you revoke it.

<u>Authorization</u>— By signing this consent form, you authorize use and disclosure of personal information to, and review of your medical records by the people and entities described above.

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02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

You do not have to authorize this disclosure of information. However, if you do not, you will not	
be able to participate in this study.	
What are my rights in this study?	
Taking part in this study is your choice. No matter what decision you make, and even if your decision changes, there will be no penalty to you. You will not lose medical care or any legal rights.	
For questions about your rights as a research participant, or if you have complaints, concerns, or questions about the research, please contact Susan M. Miller, M.D., M.P.H., Chair, Houston Methodist Research Institute Institutional Review Board for the Protection of Human Subjects, at 713-441-2750 or Ethan Natelson, MD, Chair, Houston Methodist Research Institute Institutional Review Board for the Protection of Human Subjects, at 713-441-5154. You may also contact the Director, HMRI Office of Research Protections at HMRI Office of Research Protections, 1130 John Freeman, MGJ6-016, Houston, Texas 77030. Ph: 713-441-7548	
The research team will take proper precautions to ensure that any information regarding your identity obtained in connection with this research will remain confidential; however, confidentiality cannot be guaranteed.	;
The questions about two rieds to a search particle on the any measure of the time, concerns or Where can I get more information? In second many many many many many many many many	
If you have any questions regarding your participation in this study, please ask us. If you have any additional questions later, please contact the researchers listed below to:	
Principal Investigator: Stanley H. Appel, M.D.	!
Mailing Address: Houston Methodist Neurological Institute; 6550 Fannin, #802; Houston, Texas 77030 Telephone: (713) 441-3760	-
Study Coordinator: 713-441-3420, 713-441-5192	
Optional Participation	l
Future Contact Please indicate whether you would or would not be willing to let our researchers get in touch with you in the future, to ask whether you would be willing to contribute more tissue samples or data or participate in another study at that time: WARN:003768603 CSN:2100073097942 WHEN:003768603 CSN:2100073097942	
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Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

941, Sex: M

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

Signatures			i		
Study Participant or Legally Authorized Represen	itative (LAR)	ď.			
I have read this consent form or had it read to me. I h questions have been answered. I will be given a signe including any options where I checked 'yes'.	ed copy of this form. I	agree to take part in this s	tudy		
Signature: 17. T. Brockman	Date: 2/(7/32	Ťime:			
Name (Print Legal Name): R.T. BROCK	MAN				
Legal Representative Information (If Applicable) Pho	one:				
Signer with Relationship to Subject: Parent Spouse Child Signer Sig	bling □Legal Guardian	ı □Other:			
Reason subject is unable to consent for self:			,		
Person Obtaining Consent: 200 000	•				
I have given this research subject (or his/her LAR is accurate and complete. The subject (or LAR) he nature of the study and the risks and benefits of particles.	as indicated that he o		1		
Name: Farm Atus!	Title: Study	coordinat	W		
Signature: For MATON (Date: 02/12/2023	Time: 9\04 A~			
Translation Service: I verbally translated the inform the person obtaining consent and the study participan		d the conversation between	: e n		
Name:	Organization:	<u>, , , , , , , , , , , , , , , , , , , </u>			
Signature: 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Date:	_Time:			
Witness (required if 'short form' used for translatio write, talk or see): I was present as an impartial witne the informed consent process. I observed the above s if applicable) indicate consent.	n, or when participan ess (not a member of th	e research team or family) for		
If applicable participant has capacity to consent be consent:	ut is unable to sign, h	ow did he or she indicate	e		
Witness Name:					
Withos Name.		•			
Signature:	Date:				
		(· · · · · · · · · · · · · · · · · · ·		
e Service de la companya de la comp La companya de la co		MRN:003768603 CSN:2100073097942			
FOR IRB OFFICE USE ONLY (Do not alter or modify in	any way)	Brockman, Robert T	, Reg		
Pro No. Pro00001058	Page 7 of 7	'MCM 1941 (/8 Yrs)			
Consent Approval Date: 02/07/2019 Consent Version: 1 Main ICF template v. December 2017					

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Atassi, Farah

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of	6560 Fannin Street Suite 802	713-441-3780	713-790-5079
Neurology	Houston TX 77030-2725		

Research Study Linked to Orders Only on 2/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 2/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907 No Known Allergies

History as of 2/12/2020

Medical History as of 2/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020

Surgical History as of 2/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Family History as of 2/12/2020

Family History as of 2/12/2020

Substance & Sexuality History as of 2/12/2020

Tobacco Use as of 2/12/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco	Smokeless	Source



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

				Status		Tobacco (Date	Quit	
_		_		Never U	Jsed	_	Prov	rider
ohol Use as	of 2/12/2020							
Alcoho	l Use last revi	ewed by Riley,	Lillian R, MA	on 2/12/2020)			
Alcohol Us	е	Drinks/Week		Alcohol/Wee	k	Comments		Source
Never				_				Provider
ıg Use as of	2/12/2020							
Drug U	se last review	ed by Riley, Li	llian R, MA o	n 2/12/2020				
Drug Use		Types		Frequency		Comments		Source
Never		_		_		_		Provider
cual Activity	as of 2/12/202	20						
		eviewed by Ril	ey, Lillian R,	MA on 2/12/2	020			
Sexually A	ctive	Birth Contro	ĺ	Partners		Comments		Source
Defer		<u> </u>		_		_		Provider
economic H	istory as of 2/	12/2020						
	as of 2/12/202							
Occup None	ational last re	eviewed by Rile	ey, Lillian R, I	MA on 2/12/20)20			
	c as of 2/12/2	020 reviewed by R	ilov I illian E	2 MA on 2/12	/2020			
300106	conomic iasi	reviewed by N	illey, Lillian r	K, IVIA OII <i>21</i> 1 <i>21</i>	2020			
Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	_	_	_	_	English	Not Hispanic or Latino	Caucasian	_
l Documenta	ation History a	as of 2/12/2020						
Casial Da	cumentation I	ast reviewed b	v Rilev. Lillia	n R. MA on 2	/12/2020			

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020
End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on

1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 3/13/2019

Entered on: 1/8/2020
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021
Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Authorized by: Lai, Eugene C., MD

Ordered on: 1/8/2020

Start date: 1/8/2020

Quantity: 30 tablet

Ordered on: 1/8/2020

End date: 7/14/2020

Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Authorized by: Lai, Eugene C., MD

Start date: 2/12/2020

Quantity: 180 tablet

Ordered on: 2/12/2020

End date: 7/14/2020

Refill: 3 refills by 2/11/2021

rivastigmine (EXELON) 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.

Authorized by: Lai, Eugene C., MD

Start date: 2/12/2020

Quantity: 90 patch

Ordered on: 2/12/2020

End date: 6/12/2020

Refill: 3 refills by 2/11/2021

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

Communicated by: Atassi, Farah Ordering provider: Lai, Eugene C., MD

Class: Outgoing Referral

Ordering mode: Verbal with readback

1941, Sex: M

Status: Active

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Stopped in Visit

None

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Outpatient Referral

Ambulatory referral to Occupational Therapy [320668816] (Active)

Electronically signed by: Lai, Eugene C., MD on 02/12/20 1659

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/12/20 1406 Authorized by: Lai, Eugene C., MD Frequency: Routine 02/12/20 -

Quantity: 1 Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

 Question
 Answer

 Let me know if the patient declines service or is unable to be
 No

Order comments: LSVT BIG and LOUD occupational therapy 3 times a week for 8 weeks

Referral Details

Referred By		Referred To	Туре	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Order: Ambulatory Referral To Occupational Therapy Reason: Specialty Services Required	TIRR Memorial Hermann Memorial City OP Rehab POS 929B N Gessner Rd 108 Houston TX 77024-2659 Phone: 713-797-5942 Specialty: Occupational Therapy	Occupational Therapy	Routine
Comment: LSVT BIG	G and LOUD occupational therapy 3 ti	mes a week for 8 weeks		
Question	•	Anewor		

Question

Let me know if the patient declines service or is unable to No be contacted?:

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral
Order History			Outpatient

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

Communicated by: Atassi, Farah

Class: Outgoing Referral

Ordering provider: Lai, Eugene C., MD

Ordering mode: Verbal with readback

1941, Sex: M

Status: Active

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Date/Time	Action Taken	User	Additional Information
02/12/20 1406	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/12/20 1659	Verbal Cosign	Lai, Eugene C., MD	

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Ambulatory referral to Physical Therapy [320668815] (Active)

Electronically signed by: Lai, Eugene C., MD on 02/12/20 1659

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/12/20 1406

Authorized by: Lai, Eugene C., MD Frequency: Routine 02/12/20 -

Quantity: 1
Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Services Requested	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Referral Details

		Туре	Priority
Diagnoses: Parkinson's disease	TIRR Memorial	Physical	Routine
(HCC)	Hermann Memorial	Therapy	
Order: Ambulatory Referral To	City OP Rehab POS		
Physical Therapy	929B N Gessner Rd 108		
Reason: Specialty Services	Houston TX 77024-2659		
Required	Phone: 713-797-5942		
	Specialty: Physical		
	Therapy		
and LOUD physical therapy 3 times a	week for 8 weeks		
	Answer		
:	Evaluate and Treat		
atient declines service or is unable to	No		
	(HCC) Order: Ambulatory Referral To Physical Therapy Reason: Specialty Services Required G and LOUD physical therapy 3 times a	(HCC) Order: Ambulatory Referral To Physical Therapy Reason: Specialty Services Required B and LOUD physical therapy 3 times a week for 8 weeks Answer E wallaste Ambulatory Referral To City OP Rehab POS 929B N Gessner Rd 108 Houston TX 77024-2659 Phone: 713-797-5942 Specialty: Physical Therapy E valuate and Treat	(HCC) Order: Ambulatory Referral To Physical Therapy Reason: Specialty Services Required Band LOUD physical therapy 3 times a week for 8 weeks Answer Hermann Memorial City OP Rehab POS 929B N Gessner Rd 108 Houston TX 77024-2659 Phone: 713-797-5942 Specialty: Physical Therapy Band LOUD physical therapy 3 times a week for 8 weeks Answer Evaluate and Treat

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/12/20 1406	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/12/20 1659	Verbal Cosign	Lai, Eugene C., MD	

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

Communicated by: Atassi, Farah

Class: Outgoing Referral

Ordering provider: Lai, Eugene C., MD

Ordering mode: Verbal with readback

1941, Sex: M

Status: Active

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Ambulatory referral to Speech Therapy [320668817] (Active)

Electronically signed by: Lai, Eugene C., MD on 02/12/20 1659

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/12/20 1406

Authorized by: Lai, Eugene C., MD Frequency: Routine 02/12/20 -

Quantity: 1 Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

 Question
 Answer

 Let me know if the patient declines service or is unable to be contacted?
 No

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Referral Details

Referred By		Referred To	Туре	Priority
Lai, Eugene C., MD	Diagnoses: Parkinson's disease	TIRR Memorial	Speech	Routine
6560 FANNIN ST	(HCC)	Hermann Memorial	Pathology	
SUITE 802	Order: Ambulatory Referral To	City OP Rehab POS		
HOUSTON TX 77030	Speech Therapy	929B N Gessner Rd 108		
Phone: 713-441-0239	Reason: Specialty Services	Houston TX 77024-2659		
Fax: 713-790-5044	Required	Phone: 713-797-5942		
	·	Specialty: Speech		
		Pathology		

Comment: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Question Answer

Let me know if the patient declines service or is unable to be contacted?:

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/12/20 1406	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/12/20 1659	Verbal Cosign	Lai, Eugene C., MD	

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**

Outpatient Referral - All Orders

Ambulatory referral to Physical Therapy [320668815]

Electronically signed by: Lai, Eugene C., MD on 02/12/20 1659

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/12/20 1406

Authorized by: Lai, Eugene C., MD Frequency: Routine 02/12/20 -

Quantity: 1 Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

Question Answer Services Requested **Evaluate and Treat** Let me know if the patient declines service or is unable to be No

contacted?

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Ambulatory referral to Occupational Therapy [320668816]

Electronically signed by: Lai, Eugene C., MD on 02/12/20 1659

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/12/20 1406 Authorized by: Lai, Eugene C., MD

Frequency: Routine 02/12/20 -

Quantity: 1 Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

Answer Question Let me know if the patient declines service or is unable to be

contacted?

Order comments: LSVT BIG and LOUD occupational therapy 3 times a week for 8 weeks

Ambulatory referral to Speech Therapy [320668817]

Electronically signed by: Lai, Eugene C., MD on 02/12/20 1659

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/12/20 1406

Authorized by: Lai, Eugene C., MD Frequency: Routine 02/12/20 -

Quantity: 1 Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

Question Answer Let me know if the patient declines service or is unable to be No

contacted?

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Status: Active

Status: Active

Ordering mode: Verbal with readback

Class: Outgoing Referral

Communicated by: Atassi, Farah

Communicated by: Atassi, Farah

Class: Outgoing Referral

Ordering provider: Lai, Eugene C., MD Ordering mode: Verbal with readback

Ordering provider: Lai, Eugene C., MD

Communicated by: Atassi, Farah Ordering provider: Lai, Eugene C., MD

Class: Outgoing Referral

Ordering mode: Verbal with readback

Status: Active



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary

Visit Information

Date & Time 2/12/2020 1:39 PM Provider Atassi, Farah Department HMNI Stanley H Appel Dept of Neurology Encounter # 2100074995304



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology

Visit Information

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$\mathbf{\nu}$	row	Idar	Into	rmation

Encounter Provider	Authorizing Provider	Referring Provider	
Lai, Eugene C., MD	Lai, Eugene C., MD	Pool, James L., MD	

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of	6560 Fannin Street Suite 802	713-441-3780	713-790-5079
Neurology	Houston TX 77030-2725		

Follow-up and Dispositions

• Return in about 2 months (around 4/12/2020) for Next scheduled follow up.

Level of Service

Level of Service

PR OFFICE OUTPATIENT VISIT 25 MINUTES

Research Study Linked to Office Visit on 2/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 2/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907 No Known Allergies

History as of 2/12/2020

Medical History as of 2/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Surgical History as of 2/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Family History as of 2/12/2020

Family History as of 2/12/2020

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Tobacco Use as of 2/12/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
_	_	Never Used	_	Provider

Alcohol Use as of 2/12/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		_	_	Provider

Drug Use as of 2/12/2020

Drug Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Drug Use	Types	Frequency	Comments	Source
Never	_	-	_	Provider

Sexual Activity as of 2/12/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 2/12/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	_	_	<u> </u>	Provider

Socioeconomic History as of 2/12/2020

Occupational as of 2/12/2020

Occupational last reviewed by Riley, Lillian R, MA on 2/12/2020 None

Socioeconomic as of 2/12/2020

Socioeconomic last reviewed by Riley, Lillian R, MA on 2/12/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	_	_	_	_	English	Not Hispanic or Latino	Caucasian	_

Social Documentation History as of 2/12/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020 None



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020
End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA

Start date: 3/13/2019

Entered on: 1/8/2020
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA

Start date: 10/1/2019

Entered on: 1/8/2020
End date: 6/1/2021

Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Authorized by: Lai, Eugene C., MD

Start date: 1/8/2020

Quantity: 30 tablet

Ordered on: 1/8/2020

End date: 7/14/2020

Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Authorized by: Lai, Eugene C., MD Ordered on: 2/12/2020



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

 Start date: 2/12/2020
 End date: 7/14/2020

 Quantity: 180 tablet
 Refill: 3 refills by 2/11/2021

rivastigmine (EXELON) 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.

Authorized by: Lai, Eugene C., MD Start date: 2/12/2020 Quantity: 90 patch Ordered on: 2/12/2020 End date: 6/12/2020 Refill: 3 refills by 2/11/2021

Stopped in Visit

None

Progress Notes

Progress Notes

Lai, Eugene C., MD at 2/12/2020 0800

Author: Lai, Eugene C., MD Service: — Author Type: Physician

Filed: 2/21/2020 8:42 PM Encounter Date: 2/12/2020 Creation Time: 2/12/2020 8:16 AM

Status: Signed Editor: Lai, Eugene C., MD (Physician)

NEUROLOGY FOLLOW-UP CLINIC VISIT

78-year-old ambidextrous man with a history of Parkinson's disease, mild cognitive impairment, REM sleep behavior disorder, ocular migraine, hyperlipidemia, hypothyroidism, atrial fibrillation, bladder cancer, Glaucoma, melanoma, basal cell skin cancer, and depression.

He comes with his wife, Dorothy, for follow-up of his Parkinson's disease. Last visit was on 1/8/2020. He reports physically stable. Sleep is better with trazodone and clonazepam. Appetite is good. Basic activities of daily living are independent. Gait and balance are mildly unsteady. He has no recent fall. Moods are stressed and depressed. He is still working full time as CEO of his software company. His wife needs to help him in the office these days. Memory is impaired but stable. He exercises regularly 3X/week in the Houstonian.

There is no new neurological complaint. His slowness and stiffness are under adequate control with carbidopa/levodopa 25/100 2 tablets 3X/day. He denies recent headache, dizziness, pain, weakness, confusion, dysarthria, dysphagia.

MEDICATIONS:	Sig
 apixaban (ELIQUIS) 2.5 mg tablet 	TAKE 1 TABLET TWICE DAILY
 buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet 	Take two tablets every morning and one every evening to control depression
 carbidopa-levodopa (SINEMET) 25-100 mg per tablet 	TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
 clonAZEPAM (KlonoPIN) 0.5 MG tablet 	Take 1 tablet (0.5 mg total) by mouth nightly.
 levomefolate calcium (L- METHYLFOLATE ORAL) 	Take one tablet by mouth daily to lower homocysteine
 levothyroxine (SYNTHROID) 75 mcg tablet 	Take one tablet every morning for hypothyroidism



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

• omega 3-dha-epa-fish oil (FISH Take by mouth.

OIL) 100-160-1,000 mg capsule

• rivastigmine (EXELON) 9.5

Place 9.5 mg onto the skin daily.

mg/24 hr

testosterone (ANDROGEL)20.25 mg/1.25 gram (1.62 %)

Place on the skin.

gel in metered-dose pump

traZODone (DESYREL) 50 MG Take 50 mg by mouth.
 tablet

REVIEW OF SYSTEMS:

Constitutional: Negative for easy fatigue, lack of energy. Weight gain of about 4 lbs. since last visit.

Eyes: Positive for visual disturbance due to glaucoma.

ENT: Positive for hearing loss. No nose bleed, sore throat.

Respiratory: Negative for cough and shortness of breath.

Cardiovascular: Negative for chest pain, palpitation, leg swelling.

Gastrointestinal: Positive for mild constipation. No diarrhea, abdominal pain.

Genitourinary: Positive for nocturia, frequency, urgency. No dysuria. Musculoskeletal: Negative for joint pain, joint swelling, muscle pain.

Skin: Negative for rash, lesion.

Hematological: Negative for bruising, bleeding, adenopathy.

Allergy/Immunology: Negative for allergy symptoms.

Psychiatric/Behavioral: Positive for anxiety, depression, insomnia. No agitation.

Neurological: See above.

FAMILY/SOCIAL HISTORY: Lives with wife. No cigarettes and rare alcohol.

EXAMINATION:

Vitals:

02/12/20 0817 02/12/20 0820

BP: 132/67 129/80
BP Location: Left arm Left arm
Patient Sitting Standing

Position:

Pulse: 78 75

Weight: 87.5 kg (193 lb)

Height: 6' 0.5"

<u>General</u>: Well developed and well nourished elderly man in no acute distress. He is subdued but pleasant and cooperative.

<u>Physical</u>: Head and face are normal. No pain or tenderness to palpation. No edema or rash. Mild hypomimia and hypophonia.

Neurological:

MS: He is alert and attentive. O x person, place, and time. He follows complex verbal commands. Memory is 5/5 immediate -> 0/5 delayed. Comprehension and expression are slower. Insight and judgment are mildly impaired. MoCA score (1/8/2020) = 20/30.

CN: II-XII symmetrical and adequate except bilateral hearing loss. EOM full and tongue is midline.

Motor: Strength is 5/5 and symmetrical except bilateral hip flexors, 5-/5. No tremor and mild rigidity in limbs.

Sensory: Decreased to vibration in both feet.

Coordination: F->N->F without dysmetria. Rapid alternating movements are slower bilaterally.

Gait: He arises from sitting without assistance. He walks with a slightly wide-based gait. Decreased arm swings and

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

hesitant in turning without assistance. He can perform heel, toe walking but not tandem walking.

	VISIT DIAGNOSES:	ICD-10-CN
1.	Parkinson's disease (HCC)	G20
2.	Mild cognitive impairment	G31.84
3.	Mixed anxiety depressive disorder	F41.8
4.	Idiopathic peripheral neuropathy	G60.9

IMPRESSION:

Significant for: Clinical findings are consistent with Parkinson's disease with mild cognitive impairment.

He is under a lot of stress trying to still run his company by himself, and his wife is also stressed out.

He has signs of mild cognitive impairment and peripheral neuropathy with gait imbalance.

Neurological and cognitive examinations are without notable change from last visit.

Physical examination is stable.

PLANS:

Patient's neurologic condition is discussed with him and his wife.

He agrees to reduce his company responsibilities and work hours to decrease his stress.

He will benefit from physical and occupational therapies at TIRR Memorial city. Prescription will be sent.

Continue carbidopa/levodopa 25/100 2 tablets 3X/day for Parkinson symptoms.

Continue rivastigmine patch 9.5/24h for cognitive stabilization.

Continue trazodone 50 mg and clonazepam 0.5 mg at bedtime for sleep and RBD.

Continue bupropion 100 mg 2 tablets in the morning and 1 tablet at bedtime for mood stabilization.

Continue other present medications.

Keep physically and mentally active. Exercise regularly.

Return to clinic in 2 months.

Total Clinic Visit Time: 30 minutes.

PATIENT EDUCATION:

[x] Patient [x] Significant other(s)

Topic:

Disease specific issues [x]

Medications [x]

Medication Side effects [x]

Tests [x]

Treatment/follow-up plans [x]

Consults []

Surgical plan []

Teaching Method: Discussion [x] Handouts []

Patient/family Response: Verbalize understanding and agree(s) with treatment plans [x]

Today I spent 20 minutes of visit time on counseling and patient education.

Eugene C. Lai, M.D., Ph.D.

) igene E Laims

Robert W. Hervey Distinguished Endowed Chair in Parkinson's Disease

Professor of Neurology and Neuroscience

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

Director, Neurodegenerative Disease Clinic

Stanley H. Appel Department of Neurology Houston Methodist Neurological Institute & Weill Cornell Medical School 6560 Fannin, Suite 802 Houston, Texas 77030 TEL. 713-441-0239

FAX. 713-790-5044

Electronically signed by Lai, Eugene C., MD at 2/21/2020 8:42 PM

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

apixaban (ELIQUIS) 2.5 mg tablet [320668813] (Discontinued)

Electronically signed by: Lai, Eugene C., MD on 02/12/20 0904

Ordering user: Lai, Eugene C., MD 02/12/20 0904

Authorized by: Lai, Eugene C., MD

Frequency: Routine BID 02/12/20 - 365 days Discontinued by: Atassi, Farah 07/14/20 1338

Reordered from: apixaban (ELIQUIS) 2.5 mg tablet

Status: Discontinued Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020 9:00 PM	

Order Details

Frequency	Duration	Priority	Order Class
2 times daily	365 days	Routine	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/12/20 0904	Sign	Lai, Eugene C., MD	Reorder from Order: 9125746
02/12/20 0904	Taking Flag Checked	Lai, Eugene C., MD	
07/14/20 1210	Reorder	Atassi, Farah	To Order: 335306862
07/14/20 1338	Discontinue	Atassi, Farah	

apixaban (ELIQUIS) 2.5 mg tablet [320668813] DISCONTINUED

Dose: 2.5 mg Frequency: 2 times daily Route: oral

Dispense Quantity: 180 tablet Refills: 3

Sig: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Start Date: 02/12/20 End Date: 07/14/20 (ordered for 730 doses)

Discontinued by: Atassi, Farah on 7/14/2020 13:38

Written Date: 02/12/20 Expiration Date: 02/11/21 Original Order: apixaban (ELIQUIS) 2.5 mg tablet [9125746]

Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Status: Discontinued

Visit date: 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Providers

Ordering Provider and Authorizing Provider:

Lai, Eugene C., MD

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

rivastigmine (EXELON) 9.5 mg/24 hr [320668814] (Discontinued)

Electronically signed by: Lai, Eugene C., MD on 02/12/20 0904

Ordering user: Lai, Eugene C., MD 02/12/20 0904

Authorized by: Lai, Eugene C., MD

Frequency: Routine Daily 02/12/20 - 365 days Discontinued by: Lai, Eugene C., MD 06/12/20 1626

Reordered from: rivastigmine (EXELON) 9.5 mg/24 hr

Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/13/2020 9:00 AM	

Order Details

Frequency	Duration	Priority	Order Class
daily	365 days	Routine	Normal

Outpatient **Order History**

Date/Time	Action Taken	User	Additional Information
02/12/20 0904	l Sign	Lai, Eugene C., MD	Reorder from Order: 9125750
02/12/20 0904	Taking Flag Checked	Lai, Eugene C., MD	
06/12/20 1558	Reorder	Lai, Eugene C., MD	To Order: 335306861
06/12/20 1626	Discontinue	Lai, Eugene C., MD	

rivastigmine (EXELON) 9.5 mg/24 hr [320668814] DISCONTINUED

Route: transdermal Dose: 1 patch Frequency: daily

Dispense Quantity: 90 patch Refills: 3

Sig: Place 1 patch on the skin daily.

End Date: 06/12/20 (ordered for 365 doses) Start Date: 02/12/20

Discontinued by: Lai, Eugene C., MD on 6/12/2020 16:26

Written Date: 02/12/20 Expiration Date: 02/11/21 Original Order: rivastigmine (EXELON) 9.5 mg/24 hr [9125750]

Providers

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Ordering Provider and Authorizing Provider:

Lai, Eugene C., MD

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology All Parent Orders

Medications - All Orders

apixaban (ELIQUIS) 2.5 mg tablet [320668813]

Electronically signed by: Lai, Eugene C., MD on 02/12/20 0904

Ordering user: Lai, Eugene C., MD 02/12/20 0904

Authorized by: Lai, Eugene C., MD

Frequency: Routine BID 02/12/20 - 365 days

Discontinued by: Atassi, Farah 07/14/20 1338

Reordered from: apixaban (ELIQUIS) 2.5 mg tablet [9125746]

Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Status: Discontinued

Status: Discontinued

rivastigmine (EXELON) 9.5 mg/24 hr [320668814]

Electronically signed by: Lai, Eugene C., MD on 02/12/20 0904

Ordering user: Lai, Eugene C., MD 02/12/20 0904

Authorized by: Lai, Eugene C., MD

Frequency: Routine Daily 02/12/20 - 365 days Discontinued by: Lai, Eugene C., MD 06/12/20 1626

Reordered from: rivastigmine (EXELON) 9.5 mg/24 hr [9125750]

Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals

Vital Signs - Last Recorded				Most recent update: 2/12/2020 8:21 AM by Riley. Lillian R, MA		
	BP 129/80 (BP Location: Left arm, Patient Position: Standing)	Pulse 75	Ht 6' 0.5"	Wt 87.5 kg (193 lb)	BMI 25.82 kg/m²	

Flowsheets



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

Custom Formula Dat	а					
Row Name	02/12/20 0820	02/12/20 0817				
Adult IBW/VT Calcu	Adult IBW/VT Calculations					
IBW/kg (Calculated)	_	78.75 -LR at 02/12/20 0818				
Low Range Vt 6mL/kg	_	472.5 mL/kg -LR at 02/12/20 0818				
Adult Moderate Range Vt 8mL/kg	_	630 mL/kg -LR at 02/12/20 0818				
Adult High Range Vt 10mL/kg	_	787.5 mL/kg -LR at 02/12/20 0818				
IBW/kg (Calculated) (lbs)	_	173.61 -LR at 02/12/20 0818				
OTHER						
BMI (Calculated)	_	25.8				
IBW/kg (Calculated) Male	_	-LR at 02/12/20 0818 78.75 kg -LR at 02/12/20 0818				
IBW/kg (Calculated) Female	_	74.25 kg -LR at 02/12/20 0818				
BMI	_	25.8 -LR at 02/12/20 0818				
Total Weight Change	_	193 -LR at 02/12/20 0818				
Total Weight Change	_	+193 -LR at 02/12/20 0818				
Weight Change Since Last Visit	_	4 -LR at 02/12/20 0818				
Weight Change Since Last Visit	_	+4 -LR at 02/12/20 0818				
Internal Initial Weight - Reference Only	_	0 -LR at 02/12/20 0818				
Fluid Needs	_	63260 -LR at 02/12/20 0818				
BSA (Calculated - sq m)	_	2.11 sq meters -LR at 02/12/20 0818				
MAP (Calculated)	96.33 -LR at 02/12/20 0821	88.67 -LR at 02/12/20 0819				
Body Composition /	Analysis					
BMI	_	25.8 -LR at 02/12/20 0818				
Dietitian Vitals						
BMI (Calculated)	_	25.8 -LR at 02/12/20 0818				
IBW/kg (Calculated)	_	78.75 -LR at 02/12/20 0818				
IBW/kg (Calculated) Female	_	74.25 kg -LR at 02/12/20 0818				
IBW/kg (Calculated) Males	_	78.75 -LR at 02/12/20 0818				
Fluid Needs						
Total Fluid Estimated Needs	_	63260 -LR at 02/12/20 0818				

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

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Row Name	02/12/20 0820	02/12/20 0817
OTHER		
Change in SBP	-3 -LR at 02/12/20 0821	132 -LR at 02/12/20 0819

Encounter Vitals

Row Name	02/12/20 0820	02/12/20 0817
Enc Vitals		
BP	129/80 -LR at 02/12/20 0821	132/67 -LR at 02/12/20 0819
Pulse	75 -LR at 02/12/20 0821	78 -LR at 02/12/20 0819
Weight	_	87.5 kg (193 lb) -LR at 02/12/20 0818
Height	_	6' 0.5" -LR at 02/12/20 0818
Vital Signs		
BP Location	Left arm -LR at 02/12/20 0821	Left arm -LR at 02/12/20 0819
Patient Position	Standing -LR at 02/12/20 0821	Sitting -LR at 02/12/20 0819

Social Determinants

Row Name	02/12/20 08:18:38
Alcohol Use	
How often do you have a drink containing alcohol?	Never Data migrated from History -LR at 05/18/21 1428

Vital Signs

Row Name	02/12/20 0913	
OTHER		
Stimulants	000 -DH at 02/12/20 0813	
Sedatives	160 -DH at 02/12/20 0813	
Narcotics	080 -DH at 02/12/20 0813	

User Key

(r) = Recorded	∣By, (t) =	Taken By, ((c) = 0	Cosigned By
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Initials	Name	Effective Dates	Provider Type	Discipline
DH	Hm Interface, Documentation Incoming	_	<u> </u>	_
LR	Riley, Lillian R, MA	01/08/20 - 05/17/20	Medical Assistant	_

Patient Instructions

Will benefit from physical and occupational therapies at TIRR Memorial city. Continue present medications.

Keep physically and mentally active. Exercise regularly.



Brockman, Robert T MRN: 003768603, DOB: 1941, Sex: M Visit date: 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient Instructions (continued)

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology Patient Instuctions

Patient Instructions History

Patient Instructions Revisions	Status	Date&Time	By User
Will benefit from physical and occupational therapies at TIRR Memorial city. Continue present medications. Keep physically and mentally active. Exercise regularly.	Addendum	02/21/2020 7:29 PM	LAI, EUGENE
Will benefit from physical and occupational therapies at YIRR Memorial city. Continue present medications. Keep physically and mentally active. Exercise regularly.	Addendum	02/12/2020 9:08 AM	LAI, EUGENE
Continue present medications. Keep physically and mentally active. Exercise regularly.	Signed	02/12/2020 8:33 AM	LAI, EUGENE

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary

AFTER VISIT SUMMARY



25.82

Heiaht Height 6' 0.5"

You saw Eugene C. Lai, MD on Wednesday February 12, 2020.

The following issues were addressed: Parkinson disease and Mild

Robert T. Brockman MRN: 003768603

📆 2/12/2020 8:00 AM ♀ HMNI Stanley H Appel Dept of Neurology 713-441-3780

Today's Visit

cognitive impairment.

129/80

Weiaht

193 lb

Pulse

75

Instructions from Eugene C. Lai, MD

Will benefit from physical and occupational therapies at YIRR Memorial city.

Continue present medications.

Keep physically and mentally active. Exercise regularly.



Your medications have changed today

See your updated medication list for details.



Pick up these medications at Briargrove Pharmacy -Houston TX - Houston, TX - 6435 San Felipe

apixaban • rivastigmine

Address: 6435 San Felipe, Houston TX 77057 Phone: 713-783-5704



Return in about 2 months (around 4/12/2020) for Next scheduled follow up.

What's Next

You currently have no upcoming appointments scheduled.

Today's Medication Changes

(i) Accurate as of February 12, 2020 9:52 AM. If you have any questions, ask your nurse or doctor.

CHANGE how you take these medications

rivastigmine 9.5 mg/24 hr

Place 1 patch on the skin daily. What changed: See the new instructions. Changed by: Eugene C. Lai, MD

Robert T. Brockman (MRN: 003768603) • Printed by Janet Zelaya, MA at 2/12/20 9:52 AM

Page 1 of 3 Epic

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Today's Medication Changes (continued)

Where to Get Your Medications

These medications were sent to Briargrove Pharmacy - Houston TX - Houston, TX - 6435 San Felipe 6435 San Felipe, Houston TX 77057

Phone: 713-783-5704

□ apixaban 2.5 mg tablet

□ rivastigmine 9.5 mg/24 hr

Allergies

No Known Allergies

♠ Preventive Care

Topic
SHINGLES VACCINES (1)

Due

05/28/1991

← Current Health Issues

Dementia associated with Parkinson's disease

Parkinson disease

Pool, James L., MD	PCP - General	Endocrinology		12/26/19	a .	
	Relationship	Specialty	Notifications	Start	End	

Phone: 713-798-0180

MyChart Signup

For your convenience, Houston Methodist MyChart allows you to send messages to your doctor's office, view your test results, renew your prescriptions, schedule appointments and more. To sign up, go to HoustonMethodist.org/mychart and click on the **Sign Up Now** button in the "New User?" box. Enter your Houston Methodist MyChart Activation Code exactly as it appears below. You will not need this code once you have completed the sign-up process. This code will expire 90 days from the date of this After Visit Summary.

Houston Methodist MyChart Activation Code: QKXX4-7Z7B4-VV2WC Expires: 3/28/2020 9:52 AM

If you have questions, please call 832.667.5694 to speak with our Houston Methodist Customer Service Team. Remember, do not use Houston Methodist MyChart if you have an urgent need or request. For medical emergencies, dial **911**.

Robert T. Brockman (MRN: 003768603) • Printed by Janet Zelaya, MA at 2/12/20 9:52 AM

Page 2 of 3 Epic



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Your Medication List as of February 12, 2020 9:	52 AM
(Always use your most recent med list.	
AndroGeL 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump Generic drug: testosterone	
apixaban 2.5 mg tablet Commonly known as: ELIQUIS	Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.
buPROPion SR 100 MG 12 hr tablet Commonly known as: WELLBUTRIN SR	
carbidopa-levodopa 25-100 mg per tablet Commonly known as: SINEMET	
clonAZEPAM 0.5 MG tablet Commonly known as: KlonoPIN	Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
FISH OIL 100-160-1,000 mg capsule Generic drug: omega 3-dha-epa-fish oil	
L-METHYLFOLATE ORAL	
rivastigmine 9.5 mg/24 hr Commonly known as: EXELON	Place 1 patch on the skin daily.
SYNTHROID 75 mcg tablet Generic drug: levothyroxine	
traZODone 50 MG tablet Commonly known as: DESYREL	

Robert T. Brockman (MRN: 003768603) • Printed by Janet Zelaya, MA at 2/12/20 9:52 AM

Page 3 of 3 Epic



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

Visit Information

Date & Time 2/12/2020 8:00 AM Provider Lai, Eugene C., MD Department HMNI Stanley H Appel Dept of Neurology Encounter # 2100073526625

INEC

Coding Summary for this Encounter

Code	Description	Service Date	Service Provider	Qty
99214	PR OFFICE OUTPATIENT VISIT 25 MINUTES	2/12/2020	Lai, Eugene C., MD	1
	Dy Darkingon's diagona [C20] Mild cognitive impe	irmant as stated [C3	1 0.41 Other enecified enviety die	ordoro [E44 0]

Dx: Parkinson's disease [G20], Mild cognitive impairment, so stated [G31.84], Other specified anxiety disorders [F41.8], Hereditary and idiopathic neuropathy, unspecified [G60.9]

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/3/2020

1941, Sex: M

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Atassi, Farah

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of	6560 Fannin Street Suite 802	713-441-3780	713-790-5079
Neurology	Houston TX 77030-2725		

Research Study Linked to Orders Only on 2/3/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/3/2020

Problems last reviewed by Lai, Eugene C., MD on 1/8/2020 1538

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 2/3/2020

Allergies last reviewed by Lai, Eugene C., MD on 1/8/2020 1538 No Known Allergies

History as of 2/3/2020

Medical History as of 2/3/2020

Medical last reviewed by Lai, Eugene C., MD on 1/8/2020

Surgical History as of 2/3/2020

Surgical last reviewed by Lai, Eugene C., MD on 1/8/2020 None

Family History as of 2/3/2020

Family History as of 2/3/2020

Substance & Sexuality History as of 2/3/2020

Tobacco Use as of 2/3/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 1/8/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco	Smokeless	Source



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/3/2020

1941, Sex: M

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

	Status	Tobacco Quit Date	
_	Never Used	_	Provider

Alcohol Use as of 2/3/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 1/8/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		_	_	Provider

Drug Use as of 2/3/2020

Drug Use last reviewed by Riley, Lillian R, MA on 1/8/2020

Drug Use	Types	Frequency	Comments	Source
Never	_	_	-	Provider

Sexual Activity as of 2/3/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 1/8/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	_	_	<u> </u>	Provider

Socioeconomic History as of 2/3/2020

Socioeconomic as of 2/3/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	_	_	_	_	English	Not	Caucasian	_
						Hispanic or		
						Latino		

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 1/8/2020 1538

apixaban (ELIQUIS) 2.5 mg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: TAKE 1 TABLET TWICE DAILY

Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 8/4/2018
End date: 2/12/2020

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/3/2020

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020

Informant: Family Member

rivastigmine (EXELON) 9.5 mg/24 hr [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 9.5 mg onto the skin daily.

Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 11/11/2019
End date: 2/12/2020

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on

1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA

Start date: 3/13/2019

Entered on: 1/8/2020
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021

Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Authorized by: Lai, Eugene C., MD

Start date: 1/8/2020

Quantity: 30 tablet

Ordered on: 1/8/2020

End date: 7/14/2020

Refill: 2 refills by 7/6/2020

Stopped in Visit

None

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Outpatient Referral

Ambulatory referral to Occupational Therapy [320668811] (Discontinued)

Electronically signed by: Lai, Eugene C., MD on 02/03/20 1313

Mode: Ordering in Verbal with readback mode Communicated by: Atassi, Farah

Status: Discontinued



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/3/2020

941, Sex: M

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Ordering user: Atassi, Farah 02/03/20 0957 Authorized by: Lai, Eugene C., MD Frequency: Routine 02/03/20 -

Quantity: 1 Diagnoses

Parkinson's disease (HCC) [G20]

Ordering provider: Lai, Eugene C., MD Ordering mode: Verbal with readback

Class: Outgoing Referral

Discontinued by: Atassi, Farah 02/12/20 1340 [Entered in Error]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be	No
contacted?	

Order comments: LSVT- BIG Physical and occupational therapies 3 times a week for 8 weeks for Parkinson's disease

Referral Details

Referred By		Referred To	Туре	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Reason: Specialty Services Required	West, John David, PT 2305 SAN FELIPE ST HOUSTON TX 77019- 3401 Phone: 713-790-1221 Fax: 713-790-0254 Specialty: Occupational Therapy	Occupational Therapy	Routine
Comment: LSVT- B	IG Physical and occupational therapies	. ,	for Parkinson's d	isease
Question		Answer		
Let me know if the post be contacted?:	patient declines service or is unable to	No		

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/3/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/03/20 0957	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/03/20 1313	Verbal Cosign	Lai, Eugene C., MD	
02/12/20 1340	Cancel	Atassi, Farah	Reason:Entered in Error

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Ambulatory referral to Physical Therapy [320668810] (Discontinued)

Electronically signed by: Lai, Eugene C., MD on 02/03/20 1313 Mode: Ordering in Verbal with readback mode

Ordering user: Atassi, Farah 02/03/20 0957 Authorized by: Lai, Eugene C., MD Frequency: Routine 02/03/20 -

Quantity: 1

Communicated by: Atassi, Farah Ordering provider: Lai, Eugene C., MD Ordering mode: Verbal with readback

Class: Outgoing Referral

Discontinued by: Atassi, Farah 02/12/20 1340 [Entered in Error]

Status: Discontinued

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/3/2020

1941, Sex: M

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Services Requested	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT- BIG Physical and occupational therapies 3 times a week for 8 weeks for Parkinson's disease

Referral Details

Referred By		Referred To	Туре	Priority
Lai, Eugene C., MD	Diagnoses: Parkinson's disease	West, John David, PT	Physical	Routine
6560 FANNIN ST	(HCC)	2305 SAN FELIPE ST	Therapy	
SUITE 802	Reason: Specialty Services	HOUSTON TX 77019-		
HOUSTON TX 77030	Required	3401		
Phone: 713-441-0239	·	Phone: 713-790-1221		
Fax: 713-790-5044		Fax: 713-790-0254		
		Specialty: Physical		
		Therapy		
Comment: LSVT- B	IG Physical and occupational therapies	s 3 times a week for 8 weeks	for Parkinson's	s disease
A	•	_		

Question	Answer
Services Requested:	Evaluate and Treat
Let me know if the patient declines service or is unable to	No
be contacted?:	

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/3/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/03/20 0957	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/03/20 1313	Verbal Cosign	Lai, Eugene C., MD	
02/12/20 1340	Cancel	Atassi, Farah	Reason:Entered in Error

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Ambulatory referral to Speech Therapy [320668812] (Discontinued)

Electronically signed by: Lai, Eugene C., MD on 02/03/20 1313

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/03/20 0957 Authorized by: Lai, Eugene C., MD Frequency: Routine 02/03/20 -

Quantity: 1 Diagnoses

Parkinson's disease (HCC) [G20]

Communicated by: Atassi, Farah Ordering provider: Lai, Eugene C., MD Ordering mode: Verbal with readback

Class: Outgoing Referral

Discontinued by: Atassi, Farah 02/12/20 1339 [Entered in Error]

Status: Discontinued



Brockman, Robert T MRN: 003768603, DOB

1941, Sex: M

Visit date: 2/3/2020

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Questionnaire

Question Answer Let me know if the patient declines service or is unable to be No contacted?

Order comments: LSVT- LOUD speech therapy 3 times a week for 8 weeks for Parkinson's Disease.

Referral Details

Referred By		Referred To	Туре	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Reason: Specialty Services Required	West, John David, PT 2305 SAN FELIPE ST HOUSTON TX 77019- 3401 Phone: 713-790-1221 Fax: 713-790-0254 Specialty: Speech	Speech Pathology	Routine
Comment: LSVT- LC	OUD speech therapy 3 times a week fo	Pathology or 8 weeks for Parkinson's Di	sease.	

Question Answer Let me know if the patient declines service or is unable to No

be contacted?:

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/3/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History

Date/Time	Action Taken	User	Additional Information
02/03/20 0957	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/03/20 1313	Verbal Cosign	Lai, Eugene C., MD	
02/12/20 1339	Cancel	Atassi, Farah	Reason:Entered in Error

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**

Outpatient Referral - All Orders

Ambulatory referral to Physical Therapy [320668810]

Electronically signed by: Lai, Eugene C., MD on 02/03/20 1313

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/03/20 0957

Communicated by: Atassi, Farah Ordering provider: Lai, Eugene C., MD Status: Discontinued

Outpatient



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/3/2020

1941, Sex: M

Status: Discontinued

Status: Discontinued

Outpatient Referral - All Orders (continued)

Ambulatory referral to Physical Therapy [320668810] (continued)

Authorized by: Lai, Eugene C., MD Frequency: Routine 02/03/20 -

Quantity: 1 Diagnoses Ordering mode: Verbal with readback

Class: Outgoing Referral

Discontinued by: Atassi, Farah 02/12/20 1340 [Entered in Error]

Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Services Requested	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT- BIG Physical and occupational therapies 3 times a week for 8 weeks for Parkinson's disease

Ambulatory referral to Occupational Therapy [320668811]

Electronically signed by: Lai, Eugene C., MD on 02/03/20 1313 Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/03/20 0957

Authorized by: Lai, Eugene C., MD Frequency: Routine 02/03/20 -

Quantity: 1 Diagnoses

Communicated by: Atassi, Farah Ordering provider: Lai, Eugene C., MD Ordering mode: Verbal with readback

Class: Outgoing Referral

Discontinued by: Atassi, Farah 02/12/20 1340 [Entered in Error]

Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be	No
contacted?	

Order comments: LSVT- BIG Physical and occupational therapies 3 times a week for 8 weeks for Parkinson's disease

Ambulatory referral to Speech Therapy [320668812]

Electronically signed by: Lai, Eugene C., MD on 02/03/20 1313

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/03/20 0957 Authorized by: Lai, Eugene C., MD

Frequency: Routine 02/03/20 -

Quantity: 1 Diagnoses

Communicated by: Atassi, Farah Ordering provider: Lai, Eugene C., MD Ordering mode: Verbal with readback

Class: Outgoing Referral

Discontinued by: Atassi, Farah 02/12/20 1339 [Entered in Error]

Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be	No
contacted?	

Order comments: LSVT- LOUD speech therapy 3 times a week for 8 weeks for Parkinson's Disease.

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary**

Visit Information

Date & Time Provider Department Encounter# 2/3/2020 9:45 AM HMNI Stanley H Appel Dept of 2100074561582 Atassi, Farah Neurology

Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

1941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Lai, Eugene C., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of	6560 Fannin Street Suite 802	713-441-3780	713-790-5079
Neurology	Houston TX 77030-2725		

Research Study Linked to Scanned Document on 1/20/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 1/20/2020

Problems last reviewed by Lai, Eugene C., MD on 1/8/2020 1538

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 1/20/2020

Allergies last reviewed by Lai, Eugene C., MD on 1/8/2020 1538 No Known Allergies

History as of 1/20/2020

Medical History as of 1/20/2020

Medical last reviewed by Lai, Eugene C., MD on 1/8/2020

Surgical History as of 1/20/2020

Surgical last reviewed by Lai, Eugene C., MD on 1/8/2020 None

Family History as of 1/20/2020

Family History as of 1/20/2020

Substance & Sexuality History as of 1/20/2020

Tobacco Use as of 1/20/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 1/8/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco	Smokeless	Source



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

1941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

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Patient as-o	I VISIL	(CONUIN	ueai

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Alcoho	ol Use last rev	viewed by Riley	, Lillian R, M	A on 1/8/2020)			
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ug Use as o	f 1/20/2020							
Drug U	Jse last revie	wed by Riley, L	illian R, MA o	on 1/8/2020				
Drug Use		Types		Frequency		Comments		Source
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Sexually A	Active	Birth Contro	ol	Partners		Comments		Source
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economic I	History as of 1	/20/2020						
	ic as of 1/20/							
Marital	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Status	INAIIIE							

Medication List

Medication List

This visit is during an admission. Changes to the med list made in this visit will be reflected in the After Visit Summary of the admission.

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**

All Orders

No orders found

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary**

Visit Information

Date & Time	Provider	Department	Encounter #



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

1941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

Visit Information (continued)

1/20/2020 9:06 AM

Lai, Eugene C., MD

HMNI Stanley H Appel Dept of Neurology

2100073968397



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

1941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans

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Scan on 1/20/2020 9:09 AM: Dr. Eugene Lai new patient questionnaire.

Scan (below)

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Brockman, Robert T MRN: 003768603, DOB: 1941, Sex: M Visit date: 1/20/2020

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

	Please circle illnesses bel	ow in close relatives:	:		
	Parkinson's Disease	Gait Imbalance	Stroke	Seizure	Tremor
	Involuntary movements	Heart Disease	Dementia	Bleeding	Cancer Blood
	High Blood Pressure	Lung Disease	Diabetes	Allergies	Others
_	Add more details if approp	oriate: Dad Q	ed seven	e empl	visema from
		smoking 1			Omphone @ 92
	Which of the above illness	ses or other illnesses i	nave you had:	- Bladde	n Cancer -
	cured. So	to dementi	u manga	in Dangs Am	2000 12
	Have you had any serious	s injuries such as accid	dents or broken	bones: No	Yes
	Please explain and give d	ates:			
	INJ	URY			DATE
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			<u> </u>		<i></i>
					<i></i>
	Please list all previous su	rgeries, date performe	d and the reaso	n performed.	ŀ
	SURGER	Y	DATE	REAS	OŇ
	Bladder Con	an Remark _		Sh. Seth &	erner control
	Bladder Car	cer Removed	_11_	La. Sitt	Gerna - cured
				(J13-24	8-4001
			1/	. <u> </u>	11 - 1 - 2 - 2 - 2 - 2
					
	Are you allergic to any me	edications: No) Yes	;	
2	If YES, Please list:				
	Do you use tobacco now	No Ye	s inth	ne past: No	Yes
	If YES, type and amount	used:			·
	Do you drink alcohol?	No Ye	s [.]		
	If YES, type and amount	used: Sta	pped -	used to	drink heavily
	on Fishing T	ups; not d	wing . u	rel wee	hi '
		Pag	e 2 of 6		

Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

1941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

MEDICATION LIST

Please list all medications you are currently taking:

DRUG NAME	DATE BEGAN Length of time used	DOSE (strength)	How many times per day?	REASON
Exelon Polot	3/13/11	Roath/24hro.	monnie	Porkinson
Sinomet	1/30/19	200h /3 time / d	1/3/0.	Parkin som
Elizair	appar 321s.	2.5 Mg.	1 tab Am, 1 PM	A-75
Wellowtren	1/18/19	2.5 Mg.	marin	De premon
Syntherind	appar Zhous.	15mes	1/0	Mapothyrand
androgal	GISINEX 10 res.	50mg/sgm	110	LowT
Tragodome	3/13/19	50mg	1/Dnight	Parkin sons
<i>J</i>				
	-			
	1		<u> </u>	

* Please bring ALL medications or a list of the medications you are taking to every office visit.

Page 3 of 6

Thank you,

Eugene C. Lai, M.D., Ph.D. Professor of Neurology

cicsed di Nadiology



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

٠	APPOINTMENT FORM
	DATE BOOKED:
	APPT DATE:
	BOOKED BY:
	APPT TIME:
	Patient Name: Robert (Bob) Theron Brockman, (In)
	AKA:MRN:
_	Date of Birth
	Address
	City: Houston State: TX Zip: 77024 (we home # 1
_	Home phone: () 113-680-9635 Work phone: () 113-118-1800
	Cell phone: () 2(3 - 4/2 - 99(6 Pager: ()
	Diagnosis 1:DX2:
	DX3:DX4:
	Does Patient have INSUREANCE?; No Yes SELF PAY? No Yes
	HMO PPO CPO Indemnity Medicare Medicaid Workers Comp *see pg 5
	REFERRING PHYSICIAN DICTIONARY
	Referring Physician Name:] ames F. Poole, M. O. (113-798-0180)
	Written Referral Received (Yes) No Specility: G, F.
	Address Baylor Comprehensive Clinic; 1917 Butlon Blod.
	City: Nouston State: TX Zip:
	Phone: () <u>1/3- 198-0/80</u> Fax: ()
	UPIN:MCAID TPI#
	Date of Referral: Oct 2019 Authorization No:

Page 4 of 8



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

1941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

Are you insured? YES	<u>I</u> NO Nome et la	^ /
	Name of Insu	red: Robert T. Brock
Employer: Reynolds + Re	Insura 3444 Policy Sandh Conyang Emplo 2100 01 PCP	ince Phone: <u>1-800-244-622</u> (Group No: 3329754 Over Phone: <u>1-800-244-622</u> Phone: <u>1-800-244-6</u> 22
WORKER'S COMPENSATION	INFORMATION ALA	accident
Address		aca Sant
	:	
City:	State:	
City:	State:	Zip:
City:	State:Em	Zip: uployer's Phone:
City:	State: Em	Zip: iployer's Phone:
City: Insurance Carrier Phone No: Employer's Name: Address City: DATE OF INJURY:	State:EmState:State:	Zip: iployer's Phone:

Page 5 of 6



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HMH SCURLOCK 6560 Fannin HOUSTON TX 77030 Brockman, Robert T MRN: 003768603, DOB: 1941, Sex: M Visit date: 1/20/2020

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Primary Care Physician: James E. Poole, M. D.
Phone #/Address: 213-798-0180. 1977 But len # 150
Pharmacy Name: Brian grove Pharmacy
Phone #: 7/3- 783 - 5704
<i>.</i>
EMERGENCY CONTACT INFORMATION
Relation to Patient: Snothy Kay Bruckman
Name:
Address: Kouston, tx 19028
Home phone #: 1/3 - 461 - 3375 Call this # !
Cell#:
Robert T. Brockmen II - son 713-882-1908
Comments: Wife is healthy and start and
wants to help.



, ;-

HMH SCURLOCK 6560 Fannin HOUSTON TX 77030 Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

1941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

• н -	Methodist NEUROLOGICAL INSTITUTE		
	AUTHORIZATION	FOR DISCLOSURE OF HEALTH I Department of Neurology	NFORMATION FROM
ī,	PATIENT INFORMATION		
	Patient Name: Robert	(Bob) Brockmon	
	Social Security Number:	3//	1
	Patient's Mailing Address:	2071	$\mathbf{I}_{\mathcal{A}_{n}}$
	TO BOU	ston Texas 7	1024
	Telephone number Work 7/3-6	80-9635 Home 913-210-1	80 Scell 213-412-9916
11.	INFORMATION TO BE DISCLOS		700
	l authorize Methodist Neurology	to disclose my health information	ent all Do NAT CALL
-	· · · · · · · · · · · · · · · · · · ·	,	as follows, for service dates:
	Office Visit Notes-Only-	(1 Taharatan)	Results (Last 12 Months)
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	口 Operative Report(s)	10 Other:Test	
	Discharge Summary (ies)		
	CD of Imaging CD Pictures	Faulology	Slides, Blocks or Reports
	I understand that information used	or disclosed purcuous to this and	psychological Testing and Sleep Studies on form may include information relating
	to Human Immunodeficiency Virus	(HIV), or Acquired Immunodeficiency S	on form may include information relating yndrome (AIDS); treatment for or history
			yndrone (AIDS); treatment for or history
111.	INFORMATION IS TO BE DISCLO	SED TO	+
IV.	Please list any family members	and/or non-medical persons that we	have permission to discuss your
	Name		discuss your
æ	nothy K. Broskman	Relationship to patient	Phone Number
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v.	PURPOSE OF USE OR DISCLOSE	JRE:	
V. 1	authorize the disclosure of healt	h information as described above. I	understand:
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	good faith before the revocation	was received.	mat has already been released in
	riodatient or payment may not t	be conditioned on my completion of this	authorization form.
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<u> </u>	F. T. Brackman Signature of Patient or Qualified F	Personal Representative *	12/12/2019 Date
•	If signed by a Qualified Personal Re	epresentative, the following must be see	inalatad.
	Printed name of Qualified Persona	Representative:	inpleted;
	Legal Documentation showing Aut	hority to Act on Behalf of the Patient:	
		(Ex	ample: Guardian of Patient, Executor of Estate)
TMH PI	iysician Organization : August, 2005	, man	Taubill, EXECUTOR Of Estate)
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Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

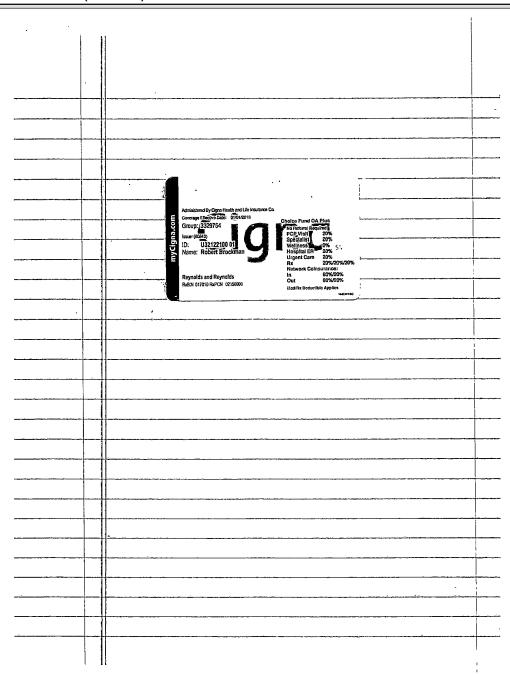
ATOMATAM HODERÍNA MARRIONA (
I. PATIENT INFORMATION HM2138	
Patient Name PARERT. (BOB) BROCK MAN	
Patlent's Mailing Address: 4 941 Social Security averted (2) 444	
HMISTON TX 12094	
Telephone Number: Work 213-118-186 Home 213-680-9635 Cell 7/3-412-9916	
II. I hereby authorize Dr. James E. Post & S., Joseph Jan Bones [Name of Houston Methodist Physician Office]	
図TO DISCLOSE/RELEASE the specified information below: OR 図TO RECEIVE the specified information below:	
MANG OF ENTITY/PERSON RECEIVING 6 5 6 0 Fanous 34 # 9 8 7 Van F	
STREET ADDRESS AND IP CODE: 1100 APRIL 150 MILES AND IP CODE: STREET ADDRESS AND IP CODE: STREET ADDRESS AND IP CODE:	-j×
(PHONE) PHONE)	
FAM Joseph Jankenie	
III. Health Information to be disclosed (please check below): 113-798-7438 12019 Date(a) of service: 2018-2019 12020	
Honto.	D
Thistory and Physical(s) A Lab Results Clinic Progress Notes	
XI Other Test Results XI Other	
IV. Purpose of Use/Disclosure: A Continuum of Care OR Other (specify): thanks of care	
V. I authorize the disclosure of health information as described above. I understand: Information used or disclosed pursuant to this authorization form may include information relating to Human immunodeficiency Virus (HIV) or Acquired Immunodeficiency Virus (HIV) or Acquired Immunodeficiency (Virus HIV).	
abuse; or mental or behavioral health or psychiatric costs	
This authorization is valid for 180 days unless otherwise stated here: A photocopy or fax of this authorization is as valid as the original.	
* I may revoke this authorization at any time by submitting a revocation in the	
the revocation was received	
 I understand the information used or disclosed may no longer be protected by federal regulations and thus subject to re-disclosure by the recipient. 	
Treatment or payment may not be conditioned on my completion of this authorization form. I may be asked to provide proof of my identity/guardianship with this authorization.	
Fees/charges will comply with all applicable laws and regulations. Payment is due prior to or at time of disclosure. My health information may be disclosed electronically or by other means.	
R.T. Baar Roman	
Ignature of Patient or Qualified Personal Representative* [Isigned by a Qualified Personal Representative, the following must be completed:	
rinted name of Qualified Personal Representative	
egal Authority to Act on Behalf of the Patient	
xample: Parent, Guardian, Executor of Estate)	
Hetholist AUTHORIZATION TO	
LEADING MEDICINE RELEASE RECORDS	
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Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

1941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)





Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

1941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

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Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

1941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Lai, Eugene C., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of	6560 Fannin Street Suite 802	713-441-3780	713-790-5079
Neurology	Houston TX 77030-2725		

Research Study Linked to Scanned Document on 1/20/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 1/20/2020

Problems last reviewed by Lai, Eugene C., MD on 1/8/2020 1538

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 1/20/2020

Allergies last reviewed by Lai, Eugene C., MD on 1/8/2020 1538 No Known Allergies

History as of 1/20/2020

Medical History as of 1/20/2020

Medical last reviewed by Lai, Eugene C., MD on 1/8/2020

Surgical History as of 1/20/2020

Surgical last reviewed by Lai, Eugene C., MD on 1/8/2020 None

Family History as of 1/20/2020

Family History as of 1/20/2020

Substance & Sexuality History as of 1/20/2020

Tobacco Use as of 1/20/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 1/8/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco	Smokeless	Source



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Patient a

				Status		Tobacco Date	Quit	
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Alcoh	ol Use last rev	viewed by Riley	, Lillian R, M	A on 1/8/2020				
Alcohol U	se	Drinks/Weel	k	Alcohol/Wee	ek	Comments		Source
Never				_		_		Provider
Drug Use	Jse last reviev	wed by Riley, L Types	illian R, MA o	on 1/8/2020 Frequency		Comments		Source
Drug l	Jse last reviev	wed by Riley, L	illian R, MA o	on 1/8/2020				
		Types		Frequency		Comments		
Never		_						
								Provide
xual Activity	y as of 1/20/20	020						Provider
		020 reviewed by Ri	iley, Lillian R	, MA on 1/8/20	020			Provider
	l Activity last			, MA on 1/8/20 Partners	020	Comments		Source
Sexua	l Activity last	reviewed by Ri			020	Comments —		
Sexually A	l Activity last	reviewed by Ri Birth Contro —			020	Comments —		Source
Sexually A Defer Deconomic I	I Activity last	Birth Contro			020	Comments		Source
Sexually A Defer	I Activity last Active History as of 1	Birth Contro			Preferred Language	Comments	Race	Source

Medication List

Medication List

This visit is during an admission. Changes to the med list made in this visit will be reflected in the After Visit Summary of the admission.

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**

All Orders

No orders found

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary**

Visit Information

Date 8	& Time	Provider	Department	Encounter #
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Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

1941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

Visit Information (continued)

1/20/2020 9:12 AM

Lai, Eugene C., MD

HMNI Stanley H Appel Dept of Neurology

2100073969105

Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

1941, Sex: M

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans

Outside Medical Record - Note

Scan on 1/20/2020 9:18 AM: Dr. Michele York clinical note 03/01/2019

Scan (below)



Michele K. York, PhD, ABPP-CN
Board Certified Clinical Neuropsychologist
Associate Professor
Department of Neurology

CONFIDENTIAL NEUROPSYCHOLOGICAL EVALUATION

Patient Name: Date of Birth (Age): Date(s) of Evaluation:

Evaluation Location:

Robert Brockman L941 (77 yr.)

03/01/2019

BCM Medical Center, McNair Campus, 9th Floor

Referred by: James Pool, MD
Referral Question: Differential Diagnosis

CPT Code: 96116 (60 mins) 96121 (120 mins) 96136 (30 mins) 96137 (180 mins) 96132 (60 mins)

96133 (180 mins)

BACKGROUND AND REFERRAL INFORMATION

Mr. Brockman is a 77 year-old, right-hand dominant, Caucasian male with a two to three year history of shortterm memory loss. He was referred by his physician for neuropsychological evaluation of his current cognitive, behavioral, and emotional functioning with the aim of informing medical differential diagnosis and facilitating clinical decision making. The following information was obtained during a clinical interview with Mr. Brockman and from available medical records.

Current Concerns and General Condition: Mr. Brockman and his spouse participated in the clinical interview. He was able to act as a reliable informant. Mr. Brockman reported declines in his short-term memory over the past 2 to 3 years. He reported that he is repeating himself, losing possession, and losing his train of thought and is more tangential. He forgets names of new individual and of familiar locations. He also finds it more difficult to complete tasks. His wife noted that he is clumsy getting out of the car and has hit curbs while driving and parking. He has increased difficulties with following directions. His wife noted spelling changes and mild stuttering in his speech. His speech is slowed and he has slowed response latencies. His decision making is also slowed, and he has difficulties multi-tasking.

Mr. Brockman reproted that he began taking Wellbutrin which has improved his mood. He noted that "it is clear that he is working too much." He denied anhedonia, depressed mood, heightened general anxiety, personality or behavioral changes, suicidal ideation, and auditory hallucinations. Sleep was described as adequate but he is a night owl and dozes off during the day. His wife reported that he began to act out his dreams a couple of years ago. He has decreased appetite and has lost weight. His wife noted that he does not speak as much. He reported that he has floaters in his visual fields. He denied visual hallucinations, but it is noted that later he pointed out a bug on the testing room floor that was not present to either the examiner or his wife.

Medical History: Medical history is remarkable for hypothyroidism, atrial fibrillation, bladder cancer with recurrence, tremor, micrographia, and back problems. He currently has plantar fasciitis, so he is not walking for exercise. He reported that he was hospitalized for a prostate infection four years ago and pericarditis. He reported an episode of vision changes in which he saw a bar of color on a spectrum that was moving. He noted he had this visual illusion for 20 minutes and then it went away. He was told that he might have had a visual headache. He began taking levodopa one month ago. His wife noted an improvement when he first started on the medication, but since the medication was increased, she reported that he has increasing clumsiness. He is scheduled to be evaluated by Dr. Jankovic for his movement disorder. Surgical history is notable for tonsillectomy, cataract surgery, and excision of a melanoma. He reported that when he was in the sixth grade he was hit on the top of the head with a hammer and may have suffered a concussion. He did not lose consciousness Familial medical

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Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/20/2020

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01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

CONFIDENTIAL NEUROPSYCHOLOGICAL EVALUATION Brockman, Robert

Michele K. York, PhD, ABPP-CN
Board Certified Clinical Neuropsychologist
Associate Professor
Department of Neurology

history is unremarkable for movement disorders or dementia. Psychiatric history is notable for depression. He has been taking bupropion for two months, which has reportedly improved his mood significantly. He is taking trazodone to aid his sleep and reducing his REM Behavior Disorder. Mr. Brockman denied current use of tobacco or illicit drugs or a remote history of substance misuse/abuse. He quit drinking alcohol two to three years ago secondary to his atrial fibrillation. He denied a history of seizures, TIA/stroke, or migraines. Please refer to his chart for a listing of his current medications. He is on a large regimen of supplements and vitamins.

Social History: Mr. Brockman has been married for 50 years and they have one son. He currently lives with his spouse in their private residence. He earned a BA in Business and attended graduate school for one year in Marketing at The University of Florida. He reported that he was a good student. He is Chairman and CEO of Revnolds and Revnolds Company.

Behavioral Observations: Mr. Brockman was tested during a single session as an outpatient. He arrived on time and was accompanied by his spouse who participated in the clinical interview. General appearance was neat and clean. He exhibited shuffling and slow gait, slowed motor behavior, and a right hand tremor. His mood was neutral, and he had a flat affect: He had a masked face. Eye movements were normal. Vision (with corrective lenses) and hearing were adequate for the testing session. Conversational speech was coherent and goal-directed, but it was sparse with short phrases. There was no evidence of paraphasias. He evidence a slight stutter at times. He showed moderately decreased ability to follow directions, and he frequently needed repetition of directions and to be reoriented to task. He perseverated to previous tasks. The examiner needed to be concrete for him to understand the task instructions. His processing speed was exremely slowed. He was cooperative but evidenced surrendering test-taking behavior. His attitude towards the examiner was appropriate and friendly. He lacked insight into his cognitive problems. During testing, the patient said he was not doing well, but he appeared very surprised. His handwriting was micrographic Hessawa bug on the Honorthe testing room that was not present. The following results are thought to be an accurate estimation of his current cognitive abilities.

MEASURES ADMINISTERED

Montréal Cognitive Assessment (MoCA); Caregiver Neuropsychiatric Inventory (NPI-Q); Clock Drawing Test; Controlled Oral Word Association Test (COWAT version: FAS); General Anxiety Disorder 7-item Scale; Geriatric Depression Scale; Hopkins Verbal Learning Test-Revised (HVLT-R); Neuropsychological Assessment Battery (NAB subtest: Naming); Praxis Examination; Rey Complex Figure Test-Meyers Version; Semantic Fluency Test; Stroop Color-Word Interference Test (Stroop subtests: Color, Color-Word, and Word); Test of Premorbid Functioning (TOPF); Trail Making Test (TMT subtest: Trails A); Verbal Series Attention Test (VSAT); Wechsler Adult Intelligence Scale-IV (WAIS-IV subtests: Coding, Digit Span, Information, Similarities, and Visual Puzzles); Wechsler Memory Scale-4th Edition (WMS-IV subtests: Logical Memory II-Older Adult, Logical Memory I-Older Adult, Usual Reproduction I, Visual Reproduction II, and Visual Reproduction Recognition); Instrumental Activities of Daily Living Scale (IADLS); Lawton and Brody Physical Self-Maintenance Scale (PSMS). Clinical Interview with patient and his spouse.

Mr. Brockman did not complete the Trail Making Test (TMT subtest: Trails B) and Wisconsin Card Sorting Test (WCST) measures due to cognitive/behavioral problems.

Informant questionnaires were sent home and completed by the patient's spouse. They were not returned by the time of the evaluation.

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Entire Encounter Scans (continued)

CONFIDENTIAL NEUROPSYCHOLOGICAL EVALUATION Brockman, Robert Michele K. York, PhD, ABPP-CN
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Associate Professor
Department of Neurology

NEUROPSYCHOLOGICAL FINDINGS

The following clinical descriptors identify performance with the range of Standard Scores (overage=100, standard deviation=15) indicated in parentheses: Very Superior (1:30), Superior (1:20-129), High Average (110-119), Average, (30-109), Low Average (80-89), Borderline (70-79), and Deficient (469). For diagnostic purposes, a cognitive deflict is considered a performance score that is >1.5.5 standard deviations own from the mean in the direction of poor performance compared to the reference group for that measure (i.e., 2-score) based on peers of similar age, gender, and education background as appropriate. This criterion is equivalent to a Standard Score <37. Score <35, or a Staled Score of <5.

Mental Status: Evaluation of Mr. Brockman's general mental status on the MoCA revealed a score of 19/30, which is below expectation. He was oriented (6/6) and short-term recall was 2/5. He was aided by category cueing for one word. He demonstrated difficulties with set shifting, drawing a cube, drawing a clock face with numbers and hands placed accurately, repeating one sentence, and with serial 7's and verbal fluency.

Intellectual: Premorbid level of intellectual functioning was estimated to be in the high average range (TOPF SS=114), based on single, atypical word reading skills. Mr. Brockman noted that the first word presented for him to read outloud was not a word ("two"). He was able to state the letters, but noted that he did not think that was a word and then stated he guessed it was two. Mr. Brockman was administered subtests from a measure of general intellectual functioning (WAIS-IV) and obtained scores ranging from borderline to high average yielding a pro-rated Full Scale IQ estimate of 87, which is in the low average range.

Attention/Concentration: Attention and mental tracking for overlearned verbal sequences was deficient for speed and for accuracy. Immediate auditory attention span for digits was low average with 7 digits forward, 3 digits backward, and 2 digits when re-ordering them in ascending sequence. Speed of single word reading and speed of color naming were deficient. Mental processing speed for manual code transcription was borderline impaired. Performance on a simple visual-motor sequencing task requiring scanning and mental tracking was borderline impaired with 0 errors.

Executive: Mr. Brockman's ability to inhibit a dominant verbal response in the face of incongruent visual stimuli was deficient. His abstract verbal reasoning was high average. Performance on a complex visual-motor sequencing task requiring scanning, tracking, and set-shifting was impaired and the task was discontinued.

Memory: Recall of culturally-based general knowledge was average. Immediate recall of verbally presented contextual material was deficient (SS=3). Delayed recall of the stories was deficient (SS=3). Retention of initially learned material was 11.1%. Recognition memory was average (16/23). Mr. Brockman began describing the WMS VR figures during LM immediate recall. Incremental learning for a semantically-categorized word list across 3 trials was borderline impaired (2, 5, and 6 words per trial), and delayed recall was in the deficient range with 0.0% retention which falls within the deficient range. On recognition memory assessment, 9/12 target words were correctly identified, 5 false positive errors were committed, with discrimination accuracy in the deficient range.

Immediate recall of basic geometric figures was deficient (SS=1). Delayed recall of the designs was deficient (SS=2). Retention of the initially learned material was 0.0%. Recognition memory was borderline impaired (1/7).

Language: Lexical fluency was low average with between 9 and 13 words per trial. Semantic fluency was deficient with 8 exemplars generated. Confrontation naming of pictured objects was average (29/31).

Visual-Perceptual: His drawing of a complex geometric design scored in the deficient range. His spatial reasoning ability to mentally arrange puzzle pieces was low average. Visuoconceptual ability to draw a clock was impaired

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CONFIDENTIAL NEUROPSYCHOLOGICAL EVALUATION Brockman, Robert Michele K. York, PhD, ABPP-CN Board Certified Clinical Neuropsychologist Associate Professor Department of Neurology

to command (CDT=3/10). He drew a micrographic clock face. The examiner produced a clock face for him, but he was unable to place the numbers accurately and drew a hand to the 10 and the 6 for 10 after 11. His copy of a clock was also impaired (CDT=6/10). He drew the clock face but the numbers were drawn in only the right side of the face and the hand size differentiation was not maintained.

Mood / Personality: On a self-report measure of anxiety, his responses fell in the mild range (GAD-7=7/21). On a face valid measure used to assess cognitive, emotional and physical symptoms of depression, Mr. Brockman endorsed the following, suggestive of within normal limits (GDS=8): boredom, feeling as though something negative is going to occur, preferring to stay home, worry about the future, declines in memory, poor energy, difficulties with concentration, and preferring to avoid social gatherings.

Activities of Daily Living: His spouse served as the informant completing a questionnaire regarding the patient's ability to complete basic and instrumental activities of daily living. Mr. Brockman reportedly has difficulties with self-care ADLs (PSMS=7/30) including ambulation. He requires mild assistance with instrumental activities of daily living (IADLs=9/31), most notably housekeeping. Although his wife did not report many functional declines, Mr. Brockman requires mild aid with his more complex ADLs.

Neurobehavioral: The patient's spouse completed an inventory assessing for the presence of neurobehavioral symptoms commonly associated with dementia, reportedly observing mild problems with agitation, anxiety, apathy, irritability, nighttime behaviors, and changes in appetite with moderate depression (NPI-Q severity=8; distress=11) which produce an overall minimal level of familial distress, with the exception of his depression and agitation which produces moderate distress.

SUMMARY AND IMPRESSION

Mr. Brockman is a 77 year-old, right-hand dominant, Caucasian male who was referred by his physician for evaluation of his current neuropsychological, behavioral, and emotional status. He currently operates in the low average range of general intellectual functioning (WAIS-IV FSIQ-87), which is a decline from his estimated premorbid intellectual functioning in the above average range. His MoCA was 19/30 (total), 6/6 (orientation), and 2/5 (short-term recall), which was significantly below expectation. Self-report of depression was within normal limits (GDS-8). Self-care ADLs (PSMS) were 7/30 and instrumental ADLs were 9/31. The NPI-Q (severity-8; distress=11) indicated problems with agitation, anxiety, apathy, irritability, nighttime behaviors, and changes in appetite, and depression for an overall minimal level of familial distress, with the exception of his depression and agitation which produces moderate distress.

Mr. Brockman demonstrated borderline impaired to deficient performances on measures of sustained attention/concentration, learning and recall of prose material and a word list, learning and recall of visual material, semantic fluency, executive functions (set shifting, inhibition, working memory, and problem solving), and visuoconstruction. Praxis was impaired for intransitive praxis tasks. These impaired performances were found within the low average to average ranges on measures of basic attention, fund of information, verbal and visual abstract reasoning, verbal fluency and naming,

This pattern of neuropsychological performance indicates a dementia of mild to moderate severity characterized by deficits in the areas of visuospatial functioning, verbal and nonverbal episodic memory, and executive functioning, with mild functional declines. To my knowledge, Mr. Brockman has not been diagnosed with a movement disorder. However, he demonstrates movements that may be consistent with a Parkinsonism. These

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CONFIDENTIAL NEUROPSYCHOLOGICAL EVALUATION Brockman, Robert Michele K. York, PhD, ABPP-CN
Board Certified Clinical Neuropsychologist
Associate Professor
Department of Neurology

abnormal movements taken together with his current diagnosis of dementia, new onset visual hallucinations and potential visual illusions, and REM Behavior Disorder, his pattern of cognitive impairments is consistent with Dementia with Lewy Bodies.

RECOMMENDATIONS

General:

- . Mr. Brockman and his family should receive feedback regarding his current level of cognitive functioning.
- Continued pharmacologic treatment of his depression appears warranted.
- Mr. Brockman should be monitored for episodes of visual hallucinations. Although he did not report
 hallucinations on interview, he saw a bug on the floor in the testing room which was not present.
- You may wish to consider referring the patient and his family to psychoeducational counseling with the
 goal of developing appropriate coping strategies, maximization of current strengths to mitigate identified
 weaknesses, and assist in future life planning.
- Mr. Brockman does not pose a significant safety risk and as such, he should receive occasional supervision
 for self-care ADLs for safety and to monitor for future changes in his ability status. He should also receive
 occasional review of instrumental activities of daily living to monitor for future changes in his ability status,
 particularly for medication and personal financial management.

Memory Compensatory Strategies:

- Mr. Brockman should exercise caution when operating potentially dangerous household appliances (e.g., stove/range, irons, food processors, etc.). Using models with automatic shut-off features would be ideal.
- Mr. Brockman should refrain from cooking activities involving potentially dangerous appliances (e.g., stove, food processor, etc.).
- The use of a smartphone is recommended for recording important information, setting reminders, and is
 maintaining and organized schedule. Applications such as Google calendar, Remember the Milk, and the
 Reminders application for the iPhone or similar techniques may be helpful.
- It may be helpful to have a mobile phone or smartphone with him to allow easy access to telephone number he could contact in an emergency or when he cannot recall this information.
- Placing a large-type calendar or clock that includes the date in a highly visible location may assist him in maintaining better temporal orientation.
- The patient may benefit from the placement of a large dry-erase board in a prominent spot in the home where important information can be posted such as the date, the day's or week's schedule, the whereabouts of his spouse/family members, their time to return, or important telephone numbers.
- The patient's family may wish to consider presenting important information that Mr. Brockman needs to
 recall in a written format when possible to allow him to refer to and review the information as necessary.
- Mr. Brockman and his family should consider establishing a 'memory station' where he would consistently
 place personal items such as his keys, checkbook/wallet, glasses, etc. to help prevent future memory
 failures regarding lost objects and to reduce anxiety and misattributions regarding the occurrence of these
 events. He is also encouraged to use external memory aids such as shopping lists, calendars, timers, a pill
 minder, and "to do" lists whenever possible to mitigate common, everyday memory failures.
- To the extent possible, he should try to avoid distracting environments when performing detailed tasks such as financial management. Breaking tasks down into more manageable units to prevent overtaxing attentional resources is another possibility. In this way, a large task can be achieved a little at a time over a week instead of an overwhelming task all in one evening, for instance.

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CONFIDENTIAL NEUROPSYCHOLOGICAL EVALUATION Brockman, Robert

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Social Activities and Other Intellectual Stimulation:

- The patient is encouraged to maintain or increase (to the extent safely possible) his current level of
 intellectual and physical stimulation to help improve stamina, buoy his mood, and maintain his current
 level of quality of life.
- Mr. Brockman may benefit from engaging in intellectual stimulation such as reading, assembling jigsaw puzzles, and other activities such as word search puzzles, crosswords, or Sudoku. Computer-based activities such as www.Lumosity.com or www.happyneuron-corp.com are options as well. Board games and familiar card or other games (e.g., dominoes, bridge, solitaire, etc.) may also be enjoyable.
- Regular physical exercise is recommended for its beneficial effects on brain health and cognitive maintenance.

Driving:

Neuropsychological tests are an imperfect predictor of real-world driving abilities; however, given his
deficits in memory, attention/concentration, executive functions, visuospatial abilities, and his recent
diagnosis of DLB, he should be encouraged to discontinue driving given concerns over his safety, that of
others on the roadways, and legal liability issues that could arise for the patient should he become
involved in a motor vehicle crash.

Legal:

 If not already in place, a family member should obtain Durable Power of Attorney for healthcare and financial matters.

Patient and Caregiver Resources:

- The Alzheimer's Association (www.alz.org/texas; 713-314-1314) provides useful information and resources for family members of patients with Alzheimer's and other types of dementia.
- Mr. Brockman and his family may benefit from community resources for seniors in the Houston area at <u>www.HoustonTx.gov/Health/Aging</u> and through the Houston Area Parkinson's Society (hapsonline.org).

The current results will be useful as a baseline to which findings from subsequent evaluations may be compared. Neuropsychological re-evaluation is recommended in one year (or sooner if his condition appears to change rapidly or if he and/or his family have additional concerns) to monitor neuropsychological, mood, and personality changes and to update recommendations.

Thank you for allowing me to participate in the care of Mr. Brockman. Please do not hesitate to contact me if you have any further questions

Michele K. York, PhD, ABPP-CN

Michele K. York, PhD

Board Certified Clinical Neuropsychologist

N.B. This assessment was conducted as a clinical evaluation and not as a forensic assessment. This fact was verbally confirmed with the patient at the outset of testing.

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Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/8/2020

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01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider In	formation
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Encounter Provider	Authorizing Provider	Referring Provider
Lai, Eugene C., MD	Lai, Eugene C., MD	Pool, James L., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of	6560 Fannin Street Suite 802	713-441-3780	713-790-5079
Neurology	Houston TX 77030-2725		

Follow-up and Dispositions

• Return in about 1 month (around 2/8/2020) for Next scheduled follow up.

Level of Service

Level of Service

PR OFFICE CONSULTATION NEW/ESTAB PATIENT 80 MIN

Research Study Linked to Office Visit on 1/8/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 1/8/2020

Problems last reviewed by Lai, Eugene C., MD on 1/8/2020 1538

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 1/8/2020

Allergies last reviewed by Lai, Eugene C., MD on 1/8/2020 1538 No Known Allergies

History as of 1/8/2020

Medical History as of 1/8/2020

Medical last reviewed by Lai, Eugene C., MD on 1/8/2020 None

Surgical History as of 1/8/2020

Surgical last reviewed by Lai, Eugene C., MD on 1/8/2020 None

Family History as of 1/8/2020

Family History as of 1/8/2020

Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/8/2020

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01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Substance & Sexuality History as of 1/8/2020
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Tobacco Use as of 1/8/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 1/8/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
_	_	Never Used	_	Provider

Alcohol Use as of 1/8/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 1/8/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		_	_	Provider

Drug Use as of 1/8/2020

Drug Use last reviewed by Riley, Lillian R, MA on 1/8/2020

Drug Use	Types	Frequency	Comments	Source
Never	_	_	<u> </u>	Provider

Sexual Activity as of 1/8/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 1/8/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	_	_	<u> </u>	Provider

Socioeconomic History as of 1/8/2020

Socioeconomic as of 1/8/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	_	_	_	_	English	Not Hispanic or	Caucasian	_
						Latino		

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 1/8/2020 1538

apixaban (ELIQUIS) 2.5 mg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]



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Medication List (continued)

Instructions: TAKE 1 TABLET TWICE DAILY

Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 8/4/2018
End date: 2/12/2020

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

rivastigmine (EXELON) 9.5 mg/24 hr [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 9.5 mg onto the skin daily.

Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 11/11/2019
End date: 2/12/2020

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 3/13/2019
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA

Start date: 10/1/2019

Entered on: 1/8/2020
End date: 6/1/2021

Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Authorized by: Lai, Eugene C., MD

Start date: 1/8/2020

Quantity: 30 tablet

Ordered on: 1/8/2020

End date: 7/14/2020

Refill: 2 refills by 7/6/2020

Stopped in Visit

None



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Progress Notes

Progress Notes

Lai, Eugene C., MD at 1/8/2020 1300

Author: Lai, Eugene C., MD Filed: 1/18/2020 1:17 PM

Status: Signed

Service: -

Encounter Date: 1/8/2020

Editor: Lai, Eugene C., MD (Physician)

Author Type: Physician

Creation Time: 1/18/2020 1:01 PM

INITIAL NEUROLOGICAL CONSULTATION

<u>CHIEF COMPLAINT</u>: Progressive Parkinson's disease symptoms, cognitive decline, depression, and sleep disturbance.

HISTORY OF PRESENT ILLNESS: The patient is a 78-year-old, ambidextrous Caucasian-American man, the CEO and Founder of Reynolds Computer Software Company, who presents with progressive Parkinson's disease symptoms, cognitive decline, depression, and sleep disturbance. He is kindly referred to me for further neurological consultation by James Pool, M.D. He comes with his wife, Dorothy, for this clinic visit. He has a 3-4 year history of memory decline. He is repeating himself, misplacing personal objects, and losing his train of thought. He has difficulty with multi-tasking, taking medications, spelling, and word-finding. He has difficulty managing his personal finances and he has a bookkeeper. He does not initiate activities as he used to. His wife states that his ability to make decisions fluctuates. He has episodes of blanking or tuning out associated with reduced interactions with his surroundings. He was advised not to drive by his physician, but he is still driving in closeby familiar areas. About 2½ years ago, he started slowing down with imbalance and walking changes. His steps became shorter and he developed a stooped posture. He also experienced depression later and bupropion was started which has helped to improve his thinking and memory. He notices improvement with his stiffness after exercise. His handwriting is messier and smaller. He stopped signing employee certificates and he is using a stamp with his signature lately. He has difficulty with fine motor functions. His voice is softer and he has some difficulty swallowing food and medications. He has excessive saliva. He has some difficulty turning in bed. He has had reduced sense of smell for about 10 years. He has been experiencing insomnia for about 10 years. He began snoring, kicking, punching, and acting out his dreams during sleep about 2-3 years ago. He was diagnosed with REM sleep behavior disorder and was prescribed clonazepam that has helped his symptoms. He reports one episode of visual disturbance when he saw a rainbow about 8 years ago, and he was diagnosed with ocular migraine with possible visual aura. He saw Dr. Joseph Jankovic on 01/30/2019 and he was diagnosed with Parkinson's disease. He was started on carbidopa/levodopa 25/100 3 times a day. He had slight improvement in his motor functioning initially, but his motor and mental functioning worsened when he increased the medication to 2 tablets 3 times a day, due to interactions with Cardizem and Vytorin. At present time, he is able to tolerate carbidopa/levodopa 25/100 2 tablets 3 times a day after he stopped the other medications, and he has noticeable improvement in his Parkinson's symptoms. He had a DaTscan of the brain on 2/15/2019 that showed significant loss of dopaminergic signals. On 3/1/2019, he had a neuropsychological evaluation by Dr. Michele York that was consistent with Dementia with Lewy Bodies due to finding of parkinsonism, dementia, new onset visual hallucination, potential visual illusion, and REM sleep behavior disorder. During the testing, he saw a bug on the floor in the room that was not present. He was started on Exelon patch on 3/13/2019 and he feels there is some improvement in his memory. He was also evaluated by Dr. Melissa Yu. He has urinary frequency and urgency. He has hearing loss and numbness in his feet. Otherwise, he denies recent headache, dizziness, vertigo, loss of consciousness, nausea/vomiting, vision or hearing change, focal weakness, and falling. There is no previous history of head trauma or toxic exposure.

<u>PAST MEDICAL HISTORY</u>: He has a history of Parkinson's disease, dementia, ocular migraine, hyperlipidemia, hypothyroidism, paroxysmal atrial fibrillation, pericarditis, bladder cancer, melanoma, basal cell skin cancer, urinary tract infection, prostatitis, erectile dysfunction, low testosterone, pseudoexfoliation glaucoma, plantar fasciitis, and depression.



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/8/2020

1941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

<u>PAST SURGICAL HISTORY</u>: He underwent tonsillectomy in 1945, transurethral resection of the prostate in 2006, bilateral cataract surgeries, polypectomy, dental surgery, basal cell carcinoma removal, and melanoma excision.

ALLERGIES: No known drug allergies.

<u>MEDICATIONS</u>: Carbidopa/levodopa 25/100 2 tablets t.i.d.; Eliquis 2.5 mg b.i.d.; levothyroxine 75 mcg daily; rivastigmine patch 9.5 mg daily; bupropion SR 100 mg b.i.d.; trazodone 50 mg q.h.s.; testosterone gel daily; omega 3-dha-epa-fish oil 100-160-1000 mg daily; and levomefolate calcium daily.

<u>FAMILY HISTORY</u>: His father died at age 78 of chronic obstructive pulmonary disease. His mother died at age 92 and she had a history of diabetes mellitus and mediastinal mass/possible lymphoma. He has one brother, age 72, who has Asperger's syndrome and some memory problems, but he is not tested. He has one son, age 45, who is healthy. There is no known family history of movement disorder or other significant neurological diseases.

SOCIAL HISTORY: He has a Bachelor's degree in Business Administration and attended graduate school for one year in Marketing at the University of Florida. He is the Chairman and CEO of Reynolds Computer Software Company. He is married and lives with his wife. He leads an active lifestyle. He exercises 3 times a week at the Houstonian for 1½ to 2 hours. He never smoked cigarettes. He used to consume alcoholic beverages heavily during fly-fishing trips and he stopped 3-4 years ago due to atrial fibrillation.

<u>REVIEW OF SYSTEM</u>: His sleep is irregular. He wakes early and has difficulty going back to sleep occasionally. He states that in the last 2 days, he had difficulty sleeping from 1 am until 5 am, and then he went to sleep until 10 am. He moves and talks during sleep. His appetite is good and his weight is stable. Otherwise, he denies recent fever, chills, chest pain, shortness of breath, abdominal discomfort, dysuria, skin rash, or joint pain.

PHYSICAL EXAMINATION: <u>Vital Signs</u>: BP = 118/63. P = 36. W = 189 lbs. H = 5' 11.5". BMI = 25.99. <u>General Appearance</u>: This is a well-developed, well-nourished, elderly man in no acute distress. He is pleasant and cooperative. <u>HEENT</u>: Unremarkable. <u>Neck and Back</u>: Supple with full range of motion. There is no tenderness to palpation or deformity. Lymphadenopathy and carotid bruit are not noted. <u>Cardiac</u>: Irregular and bradycardic. <u>Lungs</u>: Clear to auscultation. <u>Abdomen</u>: Soft and nontender. <u>Extremities</u>: Without clubbing, cyanosis or edema. <u>Skin</u>: Without rash or lesion.

NEUROEXAMINATION: Mental Status: He is alert and oriented to person, place, time, and situation. Montreal Cognitive Assessment (MoCA) score is 20/30, missing 2 points with visuospatial/executive function, 2 points with serial 7 subtraction, 1 point with language fluency, and 5 points with delayed recall. Mood and affect are appropriate. Speech is slightly hesitant. Comprehension and expression are slower. Insight and judgment are impaired. Cranial Nerves: II. – Visual fields are intact to confrontation. Fundi appear benign. III., IV., VI. – Pupils are post-surgical. Extraocular muscles are full without nystagmus, ptosis, or diplopia. V. – Sensation is intact in all divisions tested. Temporalis and masseter muscles are full. VII. – Face is symmetrical. VIII. – Hearing is decreased to finger rubs bilaterally, R>L. IX., X. – The palate elevates symmetrically. XI. – Trapezius and sternocleidomastoid muscles are full. XII. - The tongue protrudes in the midline without atrophy or fibrillation. Motor Examination: Strength is symmetrical, 5/5 except in the hip flexors that is 5-/5. Muscle tone is slightly increased bilaterally, L>R. He has no tremor or other abnormal movements. There is no atrophy, contracture, or fasciculation. Sensory Examination: Intact to pinprick and light touch, but decreased to proprioception and vibration in both feet. Coordination: Finger-nose-finger and heel-to-shin are without dysmetria. Rapid alternating movements are slower bilaterally. Reflexes: 1+ and symmetrical. Planter responses are flexor bilaterally. Gait: He is able to arise from his chair without pushing. He walks with a slightly wide-based gait. His bilateral arm swings are decreased. His turning is hesitant. He is able to perform heel and toe walking, but not tandem walking. Posture is stable to the Pull Test but Romberg is positive with body swaying.

<u>PREVIOUS STUDIES</u>: All the medical records from Epic are carefully reviewed. MRI of the brain (11/06/2018) showed no intracranial abnormalities, particularly no disproportionate lobar



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/8/2020

1941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

atrophy. DaTscan of the brain (02/15/2019) showed severe loss of dopaminergic neuronal function in the bilateral dorsal striata with loss greater on the right compared to the left.

<u>IMPRESSION</u>: This 78-year-old man presents with a 3-year history of progressive Parkinson's disease symptoms, cognitive decline, depression, and insomnia. His MoCA test score is 20/30. His neurological examination is significant for cognitive deficits, rigidity, bradykinesia, sensory impairment, and unsteadiness. Therefore, his clinical findings are most consistent with the diagnosis of Parkinson's disease with mild to moderate cognitive impairment. Differential diagnoses include: dementia with Lewy bodies, vascular parkinsonism, other secondary parkinsonism, or Parkinson plus syndromes. He has signs of peripheral polyneuropathy with gait imbalance. He also has rapid eye movement (REM) sleep behavior disorder.

<u>PLAN</u>: His neurological condition is discussed thoroughly with the patient and his wife. At this time, I will review his previous neuropsychological evaluation. I will review his laboratory test results from Dr. Pool's office. I will start clonazepam 0.5 mg one tablet at bedtime for his sleep disturbance. The benefits and potential side-effects of the new medication are explained in detail. He will continue trazodone 50 mg at bedtime. He will continue carbidopa/levodopa 25/100 2 tablets 3X/day and rivastigmine patch 9.5 mg daily and his other current medications. He will benefit from physical and occupational therapies, especially LSVT BIG and LOUD programs. He is advised to keep active physically and mentally and exercise regularly. He should avoid stress and anxiety as well as reduce his business responsibilities. Follow-up with Dr. Pool or Cardiology for bradycardia and atrial fibrillation. He or his wife will call if they have any further question or concern. He will return for a follow-up clinic visit in 1 month.

Total initial neurological consultation time = 70 minutes. More than 50% of visit time is spent in counseling and patient education.

Eugene C. Lai, M.D., Ph.D.

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Robert W. Hervey Distinguished Endowed Chair in Parkinson's Disease

Professor of Neurology and Neuroscience Director, Neurodegenerative Disease Clinic

Stanley H. Appel Department of Neurology Houston Methodist Neurological Institute & Weill Cornell Medical School 6560 Fannin, Suite 802 Houston, Texas 77030

TEL. 713-441-0239 FAX. 713-790-5044

Electronically signed by Lai, Eugene C., MD at 1/18/2020 1:17 PM

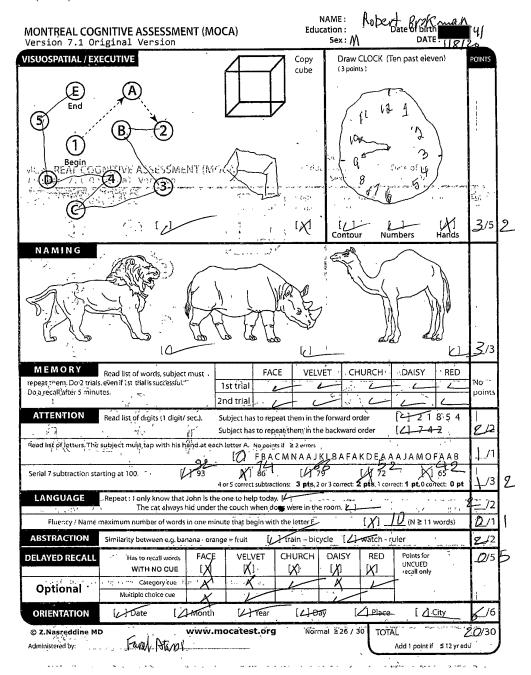
1941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Note Scans

Clinic Progress Note - Scan on 1/20/2020 9:04 AM: MoCA test 01/08/2020

Scan (below)



941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Note Scans (continued)

Clinic Progress Note - Scan on 1/20/2020 9:05 AM: UPDRS test 01/08/2020

Scan (below)

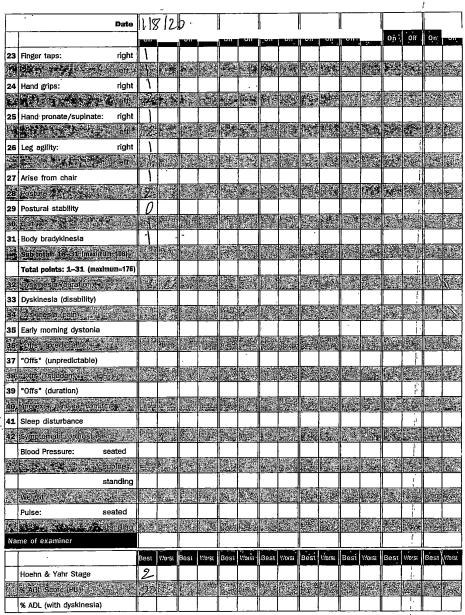
Unified Parkinson's Disease Rating Scale

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1941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Note Scans (continued)



Fahn S, Elton R, Members of UPDRS Development Committee. In: Fahn S, Marsden CD, Calne DB, Goldstein M, eds. Recent Developments in Parkinson's Disease, Vol 2, Florham Park, NJ. Macmillan Health Care Information 1987, pp 153-163, 293-304.

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

clonAZEPAM (KlonoPIN) 0.5 MG tablet [320668809] (Discontinued)



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 1/8/2020

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Electronically signed by: Lai, Eugene C., MD on 01/08/20 1536

Ordering user: Lai, Eugene C., MD 01/08/20 1536 Authorized by: Lai, Eugene C., MD

Frequency: Routine Nightly 01/08/20 - 90 days Discontinued by: Atassi, Farah 07/14/20 1338

Status: Discontinued Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Order Details

Order Details

Priority	Expected	Study Status
Routine	1/8/2020 9:00 PM	

Order Details

Frequency	Duration	Priority	Order Class
at bedtime	90 days	Routine	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
01/08/20 1536	Sign	Lai, Eugene C., MD	
02/12/20 0818	Taking Flag Checked	Riley, Lillian R, MA	
07/14/20 1214	Reorder	Atassi, Farah	To Order: 335306863
07/14/20 1338	Discontinue	Atassi, Farah	

clonAZEPAM (KlonoPIN) 0.5 MG tablet [320668809] DISCONTINUED

Dose: 0.5 mg Route: oral Frequency: at bedtime

Dispense Quantity: 30 tablet Refills: 2

Sig: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Start Date: 01/08/20 End Date: 07/14/20 (ordered for 90 doses)

Discontinued by: Atassi, Farah on 7/14/2020 13:38

Written Date: 01/08/20 Expiration Date: 07/06/20

Providers

Ordering Provider and Authorizing Provider:

Lai, Eugene C., MD

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Outpatient Referral

Ambulatory referral to Neurology [9125745] (Active)

Awaiting signature from: HM HIM ADMINISTRATOR Status: Active



Brockman, Robert T MRN: 003768603, DOB:

941, Sex: M

Visit date: 1/8/2020

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Mode: Ordering in Verbal with readback mode This order may be acted on in another encounter. Ordering user: Garza, Maria 12/27/19 0850

Authorized by: Lai, Eugene C., MD Frequency: Routine 12/27/19 -

Quantity: 1 Diagnoses Communicated by: User, Transcribing Order

Ordering provider: Lai, Eugene C., MD Ordering mode: Verbal with readback

Class: Internal Referral

Instance released by: Choksi, Krupa 1/8/2020 1:01 PM

Dementia associated with Parkinson's disease (HCC) [G20, F02.80]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No
File referral to ordering clinic?	Keep

Referral Details

Referred By		Referred To	Туре	Priority
Pool, James L., MD 1977 Butler Blvd Suite E6.150 HOUSTON TX 77030 Phone: 713-798-0180 Fax: 713-798-0174	Diagnoses: Dementia associated with Parkinson's disease (HCC) Order: Ambulatory Referral To Neurology Reason: Specialty Services Required	Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044 Specialty: Neurology	Consultation	Routine
Question		Answer		
Let me know if the post be contacted?:	patient declines service or is unable to	No		
File referral to order	ing clinic?:	Keep		

Indications

Dementia Associated With Parkinson's Disease (Hcc) [G20, F02.80 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	12/27/2019 8:50 AM	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Internal Referral

Outpatient **Order History**

Date/Time	Action Taken	User	Additional Information
01/08/20 1301	Release	Choksi, Krupa	From Order: 9125744

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**

Medications - All Orders



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/8/2020

1941, Sex: M

Medications - All Orders (continued)

apixaban (ELIQUIS) 2.5 mg tablet [9125746] Patient-reported historical medication

Ordering date: 01/08/20 1311

Ordering mode: Standard

Frequency: Routine 08/04/18 - 02/12/20

Discontinued by: Lai, Eugene C., MD 02/12/20 0904 [Reorder]

Authorized by: Provider, Historical, MD

Class: Historical Med

Class: Historical Med

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [9125747] Patient-reported historical medication

Ordering date: 01/08/20 1311 Authorized by: Provider, Historical, MD

Ordering mode: Standard

Frequency: Routine TID 10/09/19 - Until Discontinued

Admin instructions: 2 tablets every morning, 1 tablet every evening

Status

Francia, Loi S 06/01/21 1245 (Admin Instructions edited)

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [9125748] Patient-reported historical medication

Ordering date: 01/08/20 1311 Authorized by: Provider, Historical, MD

Ordering mode: Standard

Frequency: Routine 10/09/19 - 03/12/20

Discontinued by: Lai, Eugene C., MD 03/12/20 1244

Class: Historical Med

Class: Historical Med

levothyroxine (SYNTHROID) 75 mcg tablet [9125749] Patient-reported historical medication

Ordering date: 01/08/20 1311 Authorized by: Provider, Historical, MD

Ordering mode: Standard

Frequency: Routine QAM 10/09/19 - Until Discontinued Class: Historical Med

rivastigmine (EXELON) 9.5 mg/24 hr [9125750] Patient-reported historical medication

Ordering date: 01/08/20 1311 Authorized by: Provider, Historical, MD

Ordering mode: Standard

Frequency: Routine 11/11/19 - 02/12/20

Discontinued by: Lai, Eugene C., MD 02/12/20 0904 [Reorder]

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [9125751] Patient-reported historical medication

Ordering date: 01/08/20 1311 Authorized by: Provider, Historical, MD

Ordering mode: Standard

Frequency: Routine Daily - Until Discontinued Class: Historical Med

traZODone (DESYREL) 50 MG tablet [9125752] Patient-reported historical medication

Ordering date: 01/08/20 1311 Authorized by: Provider, Historical, MD

Ordering mode: Standard

Frequency: Routine Nightly 03/13/19 - Until Discontinued Class: Historical Med

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [320668807] Patient-reported historical medication

Ordering date: 01/08/20 1311 Authorized by: Provider, Historical, MD

Ordering mode: Standard

Frequency: Routine Daily - Until Discontinued Class: Historical Med

levomefolate calcium (L-METHYLFOLATE ORAL) [320668808] Patient-reported historical medication

Ordering date: 01/08/20 1314 Ordering mode: Standard

Frequency: Routine Daily 10/01/19 - 06/01/21

Discontinued by: Francia, Loi S 06/01/21 1253

Authorized by: Provider, Historical, MD

Class: Historical Med

clonAZEPAM (KlonoPIN) 0.5 MG tablet [320668809]

Electronically signed by: Lai, Eugene C., MD on 01/08/20 1536

Ordering user: Lai, Eugene C., MD 01/08/20 1536

Authorized by: Lai, Eugene C., MD

Frequency: Routine Nightly 01/08/20 - 90 days Discontinued by: Atassi, Farah 07/14/20 1338

Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Status: Discontinued



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/8/2020

1941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals

Most recent update: 1/8/2020 1:14 PM by Riley, Lillian Vital Signs - Last Recorded R, MA

BP 118/63 (BP Location: Left Pulse

36 1

Location: Left arm, Patient Position: Standing) Ht 5' 11.5"

85.7 kg (189 lb)

BMI 25.99 kg/m²

Flowsheets

Custom Formula Data

ons - - -	76.45 -LR at 01/08/20 1309 458.7 mL/kg -LR at 01/08/20 1309 611.6 mL/kg -LR at 01/08/20 1309 764.5 mL/kg -LR at 01/08/20 1309
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Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/8/2020

941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

(Calculated) IBW/kg (Calculated) Female	_	71.95 kg -LR at 01/08/20 1309
IBW/kg (Calculated) Males	_	76.45 -LR at 01/08/20 1309
Fluid Needs		
Total Fluid Estimated Needs	_	61980 -LR at 01/08/20 1309

Data

Row Name	01/08/20 1312	01/08/20 1309
OTHER		
Change in SBP	-19 -LR at 01/08/20 1314	137 -LR at 01/08/20 1309

Encounter Vitals

Row Name	01/08/20 1312	01/08/20 1309	
Enc Vitals			
BP	118/63 -LR at 01/08/20 1314	137/83 -LR at 01/08/20 1309	
Pulse	(!) 36 -LR at 01/08/20 1314	60 -LR at 01/08/20 1309	
Weight	_	85.7 kg (189 lb) -LR at 01/08/20 1309	
Height	_	5' 11.5" -LR at 01/08/20 1309	
Vital Signs			
BP Location	Left arm -LR at 01/08/20 1314	Left arm -LR at 01/08/20 1309	
Patient Position	Standing -LR at 01/08/20 1314	Sitting -LR at 01/08/20 1309	

Social Determinants

Row Name	01/08/20 13:12:45	01/08/20 13:12:43
Alcohol Use		
How often do you have a drink containing alcohol?	Never Data migrated from History -LR at 03/09/21 0050	Never Data migrated from History -LR at 05/18/21 1428

Vital Signs

Row Name	01/08/20 1401	
OTHER		
Stimulants	000 -DH at 01/08/20 1301	
Sedatives	000 -DH at 01/08/20 1301	
Narcotics	000 -DH at 01/08/20 1301	

User Key			(r) = Recorded By, (t) = Taken By, (c) = Cosigned By		
Initials	Name	Effective Dates	Provider Type	Discipline	



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/8/2020

1941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

DH	Hm Interface, Documentation Incoming	_	_	_
LR	Riley, Lillian R, MA	01/08/20 - 05/17/20	Medical Assistant	_

Patient Instructions

Start clonazepam 0.5 mg 1 tablet at bedtime for sleep. Continue trazodone 50 mg at bedtime. Continue present medications. Keep physically and mentally active. Exercise regularly.

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology Patient Instuctions

Patient Instructions History

Patient Instructions Revisions	Status	Date&Time	By User
Start clonazepam 0.5 mg 1 tablet at bedtime for sleep. Continue trazodone 50 mg at bedtime. Continue present medications. Keep physically and mentally active. Exercise regularly.	Addendum	01/08/2020 3:40 PM	LAI, EUGENE
Start clonazepam 0.5 mg 1 tablet at bedtime for sleep. Continue present medications. Keep physically and mentally active. Exercise regularly.	Signed	01/08/2020 3:37 PM	LAI, EUGENE

1941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary

AFTER VISIT SUMMARY



Robert T. Brockman MRN: 003768603

🛅 1/8/2020 1:00 PM ♀ HMNI Stanley H Appel Dept of Neurology 713-441-3780

Instructions from Eugene C. Lai, MD

Start clonazepam 0.5 mg 1 tablet at bedtime for sleep. Continue trazodone 50 mg at bedtime. Continue present medications. Keep physically and mentally active. Exercise regularly.



Your medications have changed today

See your updated medication list for details.



Pick up these medications at Briargrove Pharmacy -Houston TX - Houston, TX - 6435 San Felipe clonAZEPAM

Address: 6435 San Felipe, Houston TX 77057 Phone: 713-783-5704



Return in about 1 month (around 2/8/2020) for Next scheduled follow up.

What's Next

ESTABLISHED PATIENT NEURO with Eugene C. Lai, MD Wednesday February 12 8:00 AM

HMNI Stanley H Appel Dept of Neurology 6560 Fannin Street Suite 802 HOUSTON TX 77030-2725 713-441-3780 Arrive at: Scurlock Tower

Today's Medication Changes

(i) Accurate as of January 8, 2020 3:43 PM. If you have any questions, ask your nurse or doctor.

START taking these medications

Robert T. Brockman (MRN: 003768603) • Printed by Janet Zelaya, MA at 1/8/20 3:43 PM

Page 1 of 4 Epic

You saw Eugene C. Lai, MD on Wednesday January 8, 2020. The following issues were addressed: Parkinson disease and Dementia associated with Parkinson's





25.99





Height 5' 11.5"





941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Today's Medication Changes (continued)

START taking these medications (continued)

clonAZEPAM 0.5 MG tablet Commonly known as: KlonoPIN Take 1 tablet (0.5 mg total) by mouth nightly for 90 days. Started by: Eugene C. Lai, MD

Where to Get Your Medications

These medications were sent to Briargrove Pharmacy - Houston TX - Houston, TX - 6435 San Felipe 6435 San Felipe 6435 San Felipe, Houston TX 77057

Phone: 713-783-5704 ClonAZEPAM 0.5 MG tablet

Allergies

No Known Allergies

Preventive Care

Topic	Due
SHINGLES VACCINES (1)	05/28/1991
65+ PNEUMOCOCCAL VACCINE (1 of 2 - PCV13)	05/28/2006
INFLUENZA VACCINE	08/01/2019

Current Health Issues

Dementia associated with Parkinson's disease Parkinson disease

	Relationship	Specialty	Notifications	Start	End
Pool, James L., MD	PCP - General	Endocrinology		12/26/19	
Phone: 713-798-0180					

Robert T. Brockman (MRN: 003768603) • Printed by Janet Zelaya, MA at 1/8/20 3:43 PM

Page 2 of 4 Epic



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/8/2020

941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

(i) Always use your most recent med list.	
ANDROGEL 20.25 mg/1.25 gram (1.62 %) gel in metered- dose pump Generic drug: testosterone	
buPROPion SR 100 MG 12 hr tablet Commonly known as: WELLBUTRIN SR	
carbidopa-levodopa 25-100 mg per tablet Commonly known as: SINEMET	
clonAZEPAM 0.5 MG tablet Commonly known as: KlonoPIN	Take 1 tablet (0.5 mg total) by mouth nightly for 9 days.
ELIQUIS 2.5 mg tablet Generic drug: apixaban	
EXELON 9.5 mg/24 hr Generic drug: rivastigmine	
FISH OIL 100-160-1,000 mg capsule Generic drug: omega 3-dha-epa-fish oil	
L-METHYLFOLATE ORAL	

Robert T. Brockman (MRN: 003768603) • Printed by Janet Zelaya, MA at 1/8/20 3:43 PM

Page 3 of 4 Epic

traZODone 50 MG tablet Commonly known as: DESYREL



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/8/2020

941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

MyChart Signup

For your convenience, Houston Methodist MyChart allows you to send messages to your doctor's office, view your test results, renew your prescriptions, schedule appointments and more. To sign up, go to HoustonMethodist.org/ mychart and click on the Sign Up Now button in the "New User?" box. Enter your Houston Methodist MyChart Activation Code exactly as it appears below. You will not need this code once you have completed the sign-up process. This code will expire 90 days from the date of this After Visit Summary.

Houston Methodist MyChart Activation Code: MVQMB-B46P2-KR6RX Expires: 2/10/2020 9:07 AM

If you have questions, please call 832.667.5694 to speak with our Houston Methodist Customer Service Team. Remember, do not use Houston Methodist MyChart if you have an urgent need or request. For medical emergencies, dial 911.

Robert T. Brockman (MRN: 003768603) • Printed by Janet Zelaya, MA at 1/8/20 3:43 PM

Page 4 of 4 Epic



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/8/2020

1941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

Visit Information

Date & Time Provider Department Encounter #
1/8/2020 1:00 PM Lai, Eugene C., MD HMNI Stanley H Appel Dept of 2100073097942

Neurology

Coding Summary for this Encounter

Code	Description	Service Date	Service Provider	Qty
99205	PR OFFICE OUTPATIENT NEW 60 MINUTES	1/8/2020	Lai, Eugene C., MD	1
	Dx: Parkinson's disease [G20], Dementia in other of	diseases classified els	sewhere without behavioral distu	rbance [F02.80]

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Referral

Consultation #5045958 [last edited by Referral, End Of Day on 12/28/2020 0529]

Reason: Specialty Services Required Priority: Routine

Class: Incoming Status: Closed - Expired-Auto Closed Status updated on: 12/28/2020 Valid dates: From 12/27/2019 to 12/27/2020

Referred From

Provider: Pool, James L., MD Provider phone: 713-798-0180

Provider address: 1977 Butler Blvd Suite E6.150 HOUSTON TX 77030

Referred To

Specialty: Neurology Provider: Lai, Eugene C., MD

Provider phone: 713-441-0239 Provider address: 6560 FANNIN ST SUITE 802 HOUSTON TX

77030

Visits

Requested: 1 Authorized: 1 Completed: 0 Scheduled: 1

Procedures

Ambulatory referral to Neurology

Provider: Lai, Eugene C., MD Number requested: 1

Number approved: 1

Diagnoses

• 332.0, 294.10 (ICD-9-CM) - G20, F02.80 (ICD-10-CM) - Dementia associated with Parkinson's disease (HCC)

Order

Ambulatory referral to Neurology [9125744]

Awaiting signature from: HM HIM ADMINISTRATOR

Communicated by: User, Transcribing Order

Mode: Ordering in Verbal with readback mode Ordering user: Garza, Maria 12/27/19 0850

Ordering provider: Lai, Eugene C., MD

Authorized by: Lai, Eugene C., MD

Ordered during: Transcribe Orders on 12/27/2019

Diagnoses

Dementia associated with Parkinson's disease (HCC) [G20, F02.80]

Triage

Triage Information

Decision: None Schedule by date: 1/26/2020

Coverages

Status: Active



Brockman, Robert T MRN: 003768603, DOB: Visit date: 1/8/2020

941, Sex: M

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Referral (continued)

Cigna

Plan: Cigna Open Access/Network Covered: Covered

From: 1/1/2008

Member #: U3212210001

End of Report

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

941, Sex: M

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Atassi, Farah

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of	6560 Fannin Street Suite 802	713-441-3780	713-790-5079
Neurology	Houston TX 77030-2725		

Research Study Linked to Orders Only on 2/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 2/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907 No Known Allergies

History as of 2/12/2020

Medical History as of 2/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020

Surgical History as of 2/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020

None

GOVERNMENT EXHIBIT 4:21-CR-009-GCH No. 157

Family History as of 2/12/2020

Family History as of 2/12/2020

Substance & Sexuality History as of 2/12/2020

Tobacco Use as of 2/12/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco	Smokeless	Source



Brockman, Robert T MRN: 003768603, DOB: 1941, Sex: M

Visit date: 2/12/2020

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Patient	as-of	Visit	(contin	ued)
ıatı c ıı	a3-01	VISIL	COLLLII	ucui

				Status		Tobacco (Date	Quit	
_		_		Never U	Jsed	_	Prov	rider
Icohol Use as	of 2/12/2020							
Alcoho	I Use last revi	ewed by Riley,	, Lillian R, M <i>A</i>	on 2/12/2020)			
Alcohol Us	se	Drinks/Week		Alcohol/Wee	k	Comments		Source
Never				_		_		Provider
rug Use as of	2/12/2020							
Drug U	se last review	ed by Riley, Li	Ilian R, MA o	n 2/12/2020				
Drug Use		Types		Frequency		Comments		Source
Never		_		_		_		Provider
	Activity last re	Birth Contro		Partners	U2U	Comments		Source
Sexual Sexually A Defer	_				U2U	Comments		Source Provider
Sexually A Defer	ctive	Birth Contro			020	Comments		
Sexually A Defer	_	Birth Contro			020	Comments		
Sexually A Defer ioeconomic H Occupational	ctive listory as of 2/as of 2/12/2020	Birth Contro	I	Partners —		Comments		
Sexually A Defer ioeconomic H Occupational Occup	ctive listory as of 2/as of 2/12/2020	Birth Contro 12/2020 0 eviewed by Rile	I	Partners —		Comments		
Sexually A Defer Oeconomic H Occupational Occup None	ctive listory as of 2/- as of 2/12/2020 pational last re- ic as of 2/12/20	Birth Contro 12/2020 0 eviewed by Rile	ey, Lillian R, I	Partners — MA on 2/12/20	20	Comments		
Sexually A Defer loeconomic H Occupational None	ctive listory as of 2/- as of 2/12/2020 pational last re- ic as of 2/12/20	Birth Contro 12/2020 0 eviewed by Rile	ey, Lillian R, I	Partners — MA on 2/12/20	20	Comments	Race	

Medication List

Medication List

None

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020

Social Documentation History as of 2/12/2020



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/12/2020

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020
End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on

1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA

Start date: 3/13/2019

Entered on: 1/8/2020
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021

Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Authorized by: Lai, Eugene C., MD

Start date: 1/8/2020

Quantity: 30 tablet

Ordered on: 1/8/2020

End date: 7/14/2020

Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Authorized by: Lai, Eugene C., MD

Start date: 2/12/2020

Quantity: 180 tablet

Ordered on: 2/12/2020

End date: 7/14/2020

Refill: 3 refills by 2/11/2021

rivastigmine (EXELON) 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.

Authorized by: Lai, Eugene C., MD

Start date: 2/12/2020

Quantity: 90 patch

Ordered on: 2/12/2020

End date: 6/12/2020

Refill: 3 refills by 2/11/2021

Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Status: Active

Visit date: 2/12/2020

Communicated by: Atassi, Farah

Class: Outgoing Referral

Ordering provider: Lai, Eugene C., MD

Ordering mode: Verbal with readback

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Stopped in Visit

None

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Outpatient Referral

Ambulatory referral to Occupational Therapy [320668816] (Active)

Electronically signed by: Lai, Eugene C., MD on 02/12/20 1659

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/12/20 1406 Authorized by: Lai, Eugene C., MD Frequency: Routine 02/12/20 -

Quantity: 1 Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

 Question
 Answer

 Let me know if the patient declines service or is unable to be contacted?
 No

Order comments: LSVT BIG and LOUD occupational therapy 3 times a week for 8 weeks

Referral Details

Referred By		Referred To	Туре	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Order: Ambulatory Referral To Occupational Therapy Reason: Specialty Services Required	TIRR Memorial Hermann Memorial City OP Rehab POS 929B N Gessner Rd 108 Houston TX 77024-2659 Phone: 713-797-5942 Specialty: Occupational Therapy	Occupational Therapy	Routine
Comment: LSVT BIO	G and LOUD occupational therapy 3 ti	mes a week for 8 weeks		
Question		Answer		

Let me know if the patient declines service or is unable to No

Let me know if the patient declines service or is unable to be contacted?:

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral
Order History			Outpatient

Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Status: Active

Visit date: 2/12/2020

Communicated by: Atassi, Farah

Class: Outgoing Referral

Ordering provider: Lai, Eugene C., MD

Ordering mode: Verbal with readback

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Date/Time	Action Taken	User	Additional Information
02/12/20 1406	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/12/20 1659	Verbal Cosign	Lai, Eugene C., MD	

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Ambulatory referral to Physical Therapy [320668815] (Active)

Electronically signed by: Lai, Eugene C., MD on 02/12/20 1659

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/12/20 1406

Authorized by: Lai, Eugene C., MD Frequency: Routine 02/12/20 -

Quantity: 1 Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Services Requested	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Referral Details

Referred By		Referred To	Туре	Priority
Lai, Eugene C., MD	Diagnoses: Parkinson's disease	TIRR Memorial	Physical	Routine
6560 FANNIN ST	(HCC)	Hermann Memorial	Therapy	
SUITE 802	Order: Ambulatory Referral To	City OP Rehab POS		
HOUSTON TX 77030	Physical Therapy	929B N Gessner Rd 108		
Phone: 713-441-0239	Reason: Specialty Services	Houston TX 77024-2659		
Fax: 713-790-5044	Required	Phone: 713-797-5942		
		Specialty: Physical		
		Therapy		
Comment: LSVT BIG	G and LOUD physical therapy 3 times a	week for 8 weeks		
Question		Answer		
Services Requested	i:	Evaluate and Treat		
Let me know if the p	patient declines service or is unable to	No		
be contacted?:				

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Outpatient **Order History**

Date/Time	Action Taken	User	Additional Information
02/12/20 1406	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/12/20 1659	Verbal Cosign	Lai, Eugene C., MD	

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

Status: Active

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Communicated by: Atassi, Farah

Class: Outgoing Referral

Ordering provider: Lai, Eugene C., MD

Ordering mode: Verbal with readback

Other Orders (continued)

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Ambulatory referral to Speech Therapy [320668817] (Active)

Electronically signed by: Lai, Eugene C., MD on 02/12/20 1659

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/12/20 1406 Authorized by: Lai, Eugene C., MD

Frequency: Routine 02/12/20 -

Quantity: 1 Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

Question Answer Let me know if the patient declines service or is unable to be No contacted?

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Referral Details

Referred By		Referred To	Туре	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Order: Ambulatory Referral To Speech Therapy Reason: Specialty Services Required	TIRR Memorial Hermann Memorial City OP Rehab POS 929B N Gessner Rd 108 Houston TX 77024-2659 Phone: 713-797-5942 Specialty: Speech Pathology	Speech Pathology	Routine

Question Answer Let me know if the patient declines service or is unable to

be contacted?:

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Outpatient **Order History**

Date/Time	Action Taken	User	Additional Information
02/12/20 1406	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/12/20 1659	Verbal Cosign	Lai, Eugene C., MD	

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/12/2020

Communicated by: Atassi, Farah Ordering provider: Lai, Eugene C., MD

Class: Outgoing Referral

Ordering mode: Verbal with readback

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology All Parent Orders

Outpatient Referral - All Orders

Ambulatory referral to Physical Therapy [320668815]

Electronically signed by: Lai, Eugene C., MD on 02/12/20 1659

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/12/20 1406

Authorized by: Lai, Eugene C., MD Frequency: Routine 02/12/20 -

Quantity: 1
Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

 Question
 Answer

 Services Requested
 Evaluate and Treat

 Let me know if the patient declines service or is unable to be
 No

contacted?

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Ambulatory referral to Occupational Therapy [320668816]

Electronically signed by: Lai, Eugene C., MD on 02/12/20 1659

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/12/20 1406 Authorized by: Lai, Eugene C., MD

Frequency: Routine 02/12/20 - Quantity: 1

Quantity: 1 Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

 Question
 Answer

 Let me know if the patient declines service or is unable to be
 No

contacted?

Order comments: LSVT BIG and LOUD occupational therapy 3 times a week for 8 weeks

Ambulatory referral to Speech Therapy [320668817]

Electronically signed by: Lai, Eugene C., MD on 02/12/20 1659

Mode: Ordering in Verbal with readback mode Ordering user: Atassi, Farah 02/12/20 1406 Authorized by: Lai, Eugene C., MD

Frequency: Routine 02/12/20 -

Quantity: 1 Diagnoses

Parkinson's disease (HCC) [G20]

Questionnaire

 Question
 Answer

 Let me know if the patient declines service or is unable to be
 No

contacted?

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Status: Active

Status: Active Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD

Class: Outgoing Referral

Ordering mode: Verbal with readback

Communicated by: Atassi, Farah

Class: Outgoing Referral

Ordering provider: Lai, Eugene C., MD Ordering mode: Verbal with readback

Status: Active



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary

Visit Information

Date & Time 2/12/2020 1:39 PM Provider Atassi, Farah Department HMNI Stanley H Appel Dept of Neurology Encounter # 2100074995304



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology

Visit Information

_					
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Encounter Provider	Authorizing Provider	Referring Provider
Lai, Eugene C., MD	Lai, Eugene C., MD	Pool, James L., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of	6560 Fannin Street Suite 802	713-441-3780	713-790-5079
Neurology	Houston TX 77030-2725		

Follow-up and Dispositions

• Return in about 2 months (around 4/12/2020) for Next scheduled follow up.

Level of Service

Level of Service

PR OFFICE OUTPATIENT VISIT 25 MINUTES

Research Study Linked to Office Visit on 2/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 2/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907 No Known Allergies

History as of 2/12/2020

Medical History as of 2/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Surgical History as of 2/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020 None

Family History as of 2/12/2020

Family History as of 2/12/2020

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Tobacco Use as of 2/12/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
_	_	Never Used	_	Provider

Alcohol Use as of 2/12/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		_	_	Provider

Drug Use as of 2/12/2020

Drug Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Drug Use	Types	Frequency	Comments	Source
Never	_	-	_	Provider

Sexual Activity as of 2/12/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 2/12/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	_	_	<u> </u>	Provider

Socioeconomic History as of 2/12/2020

Occupational as of 2/12/2020

Occupational last reviewed by Riley, Lillian R, MA on 2/12/2020 None

Socioeconomic as of 2/12/2020

Socioeconomic last reviewed by Riley, Lillian R, MA on 2/12/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	_	_	_	_	English	Not Hispanic or Latino	Caucasian	_

Social Documentation History as of 2/12/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020 None



Brockman, Robert T

Visit date: 2/12/2020

MRN: 003768603, DOB: 941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020
End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA

Start date: 3/13/2019

Entered on: 1/8/2020
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA

Start date: 10/1/2019

Entered on: 1/8/2020
End date: 6/1/2021

Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Authorized by: Lai, Eugene C., MD

Start date: 1/8/2020

Quantity: 30 tablet

Ordered on: 1/8/2020

End date: 7/14/2020

Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Authorized by: Lai, Eugene C., MD Ordered on: 2/12/2020



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Start date: 2/12/2020 End date: 7/14/2020 Quantity: 180 tablet Refill: 3 refills by 2/11/2021

rivastigmine (EXELON) 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.

Authorized by: Lai, Eugene C., MD Start date: 2/12/2020 Quantity: 90 patch

Ordered on: 2/12/2020 End date: 6/12/2020 Refill: 3 refills by 2/11/2021

Stopped in Visit

None

Progress Notes

Progress Notes

Lai, Eugene C., MD at 2/12/2020 0800

Author: Lai, Eugene C., MD Service: — Author Type: Physician

Filed: 2/21/2020 8:42 PM Encounter Date: 2/12/2020 Creation Time: 2/12/2020 8:16 AM Status: Signed Editor: Lai, Eugene C., MD (Physician)

NEUROLOGY FOLLOW-UP CLINIC VISIT

78-year-old ambidextrous man with a history of Parkinson's disease, mild cognitive impairment, REM sleep behavior disorder, ocular migraine, hyperlipidemia, hypothyroidism, atrial fibrillation, bladder cancer, Glaucoma, melanoma, basal cell skin cancer, and depression.

He comes with his wife, Dorothy, for follow-up of his Parkinson's disease. Last visit was on 1/8/2020. He reports physically stable. Sleep is better with trazodone and clonazepam. Appetite is good. Basic activities of daily living are independent. Gait and balance are mildly unsteady. He has no recent fall. Moods are stressed and depressed. He is still working full time as CEO of his software company. His wife needs to help him in the office these days. Memory is impaired but stable. He exercises regularly 3X/week in the Houstonian.

There is no new neurological complaint. His slowness and stiffness are under adequate control with carbidopa/levodopa 25/100 2 tablets 3X/day. He denies recent headache, dizziness, pain, weakness, confusion, dysarthria, dysphagia.

MEDICATIONS:	Sig
 apixaban (ELIQUIS) 2.5 mg tablet 	TAKE 1 TABLET TWICE DAILY
 buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet 	Take two tablets every morning and one every evening to control depression
 carbidopa-levodopa (SINEMET) 25-100 mg per tablet 	TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
 clonAZEPAM (KlonoPIN) 0.5 MG tablet 	Take 1 tablet (0.5 mg total) by mouth nightly.
 levomefolate calcium (L- METHYLFOLATE ORAL) 	Take one tablet by mouth daily to lower homocysteine
 levothyroxine (SYNTHROID) 75 mcg tablet 	Take one tablet every morning for hypothyroidism



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

• omega 3-dha-epa-fish oil (FISH Take by mouth.

OIL) 100-160-1,000 mg capsule

• rivastigmine (EXELON) 9.5

Place 9.5 mg onto the skin daily.

mg/24 hr

• testosterone (ANDROGEL) Place on the skin. 20.25 mg/1.25 gram (1.62 %)

gel in metered-dose pump

traZODone (DESYREL) 50 MG Take 50 mg by mouth.
 tablet

REVIEW OF SYSTEMS:

Constitutional: Negative for easy fatigue, lack of energy. Weight gain of about 4 lbs. since last visit.

Eyes: Positive for visual disturbance due to glaucoma.

ENT: Positive for hearing loss. No nose bleed, sore throat.

Respiratory: Negative for cough and shortness of breath.

Cardiovascular: Negative for chest pain, palpitation, leg swelling.

Gastrointestinal: Positive for mild constination. No diarrhea, abdominal pain.

Genitourinary: Positive for nocturia, frequency, urgency. No dysuria. Musculoskeletal: Negative for joint pain, joint swelling, muscle pain.

Skin: Negative for rash, lesion.

<u>Hematological</u>: Negative for bruising, bleeding, adenopathy.

Allergy/Immunology: Negative for allergy symptoms.

Psychiatric/Behavioral: Positive for anxiety, depression, insomnia. No agitation.

Neurological: See above.

FAMILY/SOCIAL HISTORY: Lives with wife. No cigarettes and rare alcohol.

EXAMINATION:

Vitals:

02/12/20 0817 02/12/20 0820

BP: 132/67 129/80
BP Location: Left arm Left arm
Patient Sitting Standing

Position:

Pulse: 78 75

Weight: 87.5 kg (193 lb)

Height: 6' 0.5"

<u>General</u>: Well developed and well nourished elderly man in no acute distress. He is subdued but pleasant and cooperative.

<u>Physical</u>: Head and face are normal. No pain or tenderness to palpation. No edema or rash. Mild hypomimia and hypophonia.

Neurological:

MS: He is alert and attentive. O x person, place, and time. He follows complex verbal commands. Memory is 5/5 immediate -> 0/5 delayed. Comprehension and expression are slower. Insight and judgment are mildly impaired. MoCA score (1/8/2020) = 20/30.

CN: II-XII symmetrical and adequate except bilateral hearing loss. EOM full and tongue is midline.

Motor: Strength is 5/5 and symmetrical except bilateral hip flexors, 5-/5. No tremor and mild rigidity in limbs.

Sensory: Decreased to vibration in both feet.

Coordination: F->N->F without dysmetria. Rapid alternating movements are slower bilaterally.

Gait: He arises from sitting without assistance. He walks with a slightly wide-based gait. Decreased arm swings and

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

hesitant in turning without assistance. He can perform heel, toe walking but not tandem walking.

	<u>VISIT DIAGNOSES:</u>	ICD-10-CN
1.	Parkinson's disease (HCC)	G20
2.	Mild cognitive impairment	G31.84
3.	Mixed anxiety depressive disorder	F41.8
4.	Idiopathic peripheral neuropathy	G60.9

IMPRESSION:

Significant for: Clinical findings are consistent with Parkinson's disease with mild cognitive impairment.

He is under a lot of stress trying to still run his company by himself, and his wife is also stressed out.

He has signs of mild cognitive impairment and peripheral neuropathy with gait imbalance.

Neurological and cognitive examinations are without notable change from last visit.

Physical examination is stable.

PLANS:

Patient's neurologic condition is discussed with him and his wife.

He agrees to reduce his company responsibilities and work hours to decrease his stress.

He will benefit from physical and occupational therapies at TIRR Memorial city. Prescription will be sent.

Continue carbidopa/levodopa 25/100 2 tablets 3X/day for Parkinson symptoms.

Continue rivastigmine patch 9.5/24h for cognitive stabilization.

Continue trazodone 50 mg and clonazepam 0.5 mg at bedtime for sleep and RBD.

Continue bupropion 100 mg 2 tablets in the morning and 1 tablet at bedtime for mood stabilization.

Continue other present medications.

Keep physically and mentally active. Exercise regularly.

Return to clinic in 2 months.

Total Clinic Visit Time: 30 minutes.

PATIENT EDUCATION:

[x] Patient [x] Significant other(s)

Topic:

Disease specific issues [x]

Medications [x]

Medication Side effects [x]

Tests [x]

Treatment/follow-up plans [x]

Consults []

Surgical plan []

Teaching Method: Discussion [x] Handouts []

Patient/family Response: Verbalize understanding and agree(s) with treatment plans [x]

Today I spent 20 minutes of visit time on counseling and patient education.

Eugene C. Lai, M.D., Ph.D.

) igene E Laims

Robert W. Hervey Distinguished Endowed Chair in Parkinson's Disease

Professor of Neurology and Neuroscience

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

Director, Neurodegenerative Disease Clinic

Stanley H. Appel Department of Neurology Houston Methodist Neurological Institute & Weill Cornell Medical School 6560 Fannin, Suite 802 Houston, Texas 77030 TEL. 713-441-0239

FAX. 713-441-0239

Electronically signed by Lai, Eugene C., MD at 2/21/2020 8:42 PM

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

apixaban (ELIQUIS) 2.5 mg tablet [320668813] (Discontinued)

Electronically signed by: Lai, Eugene C., MD on 02/12/20 0904

Ordering user: Lai, Eugene C., MD 02/12/20 0904

Authorized by: Lai, Eugene C., MD

Frequency: Routine BID 02/12/20 - 365 days Discontinued by: Atassi, Farah 07/14/20 1338

Reordered from: apixaban (ELIQUIS) 2.5 mg tablet

Status: Discontinued

Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020 9:00 PM	

Order Details

Frequency	Duration	Priority	Order Class
2 times daily	365 days	Routine	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/12/20 0904	Sign	Lai, Eugene C., MD	Reorder from Order: 9125746
02/12/20 0904	Taking Flag Checked	Lai, Eugene C., MD	
07/14/20 1210	Reorder	Atassi, Farah	To Order: 335306862
07/14/20 1338	Discontinue	Atassi, Farah	

apixaban (ELIQUIS) 2.5 mg tablet [320668813] DISCONTINUED

Dose: 2.5 mg Route: oral Frequency: 2 times daily

Dispense Quantity: 180 tablet Refills: 3

Sig: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Start Date: 02/12/20 End Date: 07/14/20 (ordered for 730 doses)

Discontinued by: Atassi, Farah on 7/14/2020 13:38

Written Date: 02/12/20 Expiration Date: 02/11/21 Original Order: apixaban (ELIQUIS) 2.5 mg tablet [9125746]

Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Providers

Ordering Provider and Authorizing Provider:

Lai, Eugene C., MD

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

rivastigmine (EXELON) 9.5 mg/24 hr [320668814] (Discontinued)

Electronically signed by: Lai, Eugene C., MD on 02/12/20 0904

Ordering user: Lai, Eugene C., MD 02/12/20 0904

Authorized by: Lai, Eugene C., MD

Frequency: Routine Daily 02/12/20 - 365 days Discontinued by: Lai, Eugene C., MD 06/12/20 1626

Reordered from: rivastigmine (EXELON) 9.5 mg/24 hr

Status: Discontinued

Ordering provider: Lai, Eugene C., MD Ordering mode: Standard

Class: Normal

Order Details

Order Details

Priority	Expected	Study Status	
Routine	2/13/2020 9:00 AM		

Order Details

Frequency	Duration	Priority	Order Class
daily	365 days	Routine	Normal

Outpatient **Order History**

Date/Time	Action Taken	User	Additional Information
02/12/20 0904	l Sign	Lai, Eugene C., MD	Reorder from Order: 9125750
02/12/20 0904	Taking Flag Checked	Lai, Eugene C., MD	
06/12/20 1558	Reorder	Lai, Eugene C., MD	To Order: 335306861
06/12/20 1626	Discontinue	Lai, Eugene C., MD	

rivastigmine (EXELON) 9.5 mg/24 hr [320668814] DISCONTINUED

Route: transdermal Dose: 1 patch Frequency: daily

Dispense Quantity: 90 patch Refills: 3

Sig: Place 1 patch on the skin daily.

End Date: 06/12/20 (ordered for 365 doses) Start Date: 02/12/20

Discontinued by: Lai, Eugene C., MD on 6/12/2020 16:26

Written Date: 02/12/20 Expiration Date: 02/11/21 Original Order: rivastigmine (EXELON) 9.5 mg/24 hr [9125750]

Providers

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Ordering Provider and Authorizing Provider:

Lai, Eugene C., MD

6560 FANNIN ST SUITE 802, HOUSTON TX

77030

Phone: 713-441-0239 Fax: 713-790-5044

NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057 Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology All Parent Orders

Medications - All Orders

apixaban (ELIQUIS) 2.5 mg tablet [320668813]

Electronically signed by: Lai, Eugene C., MD on 02/12/20 0904

Ordering user: Lai, Eugene C., MD 02/12/20 0904

Authorized by: Lai, Eugene C., MD

Frequency: Routine BID 02/12/20 - 365 days Discontinued by: Atassi, Farah 07/14/20 1338

Reordered from: apixaban (ELIQUIS) 2.5 mg tablet [9125746]

Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

Status: Discontinued

Status: Discontinued

rivastigmine (EXELON) 9.5 mg/24 hr [320668814]

Electronically signed by: Lai, Eugene C., MD on 02/12/20 0904

Ordering user: Lai, Eugene C., MD 02/12/20 0904

Authorized by: Lai, Eugene C., MD

Frequency: Routine Daily 02/12/20 - 365 days Discontinued by: Lai, Eugene C., MD 06/12/20 1626

Reordered from: rivastigmine (EXELON) 9.5 mg/24 hr [9125750]

Ordering provider: Lai, Eugene C., MD

Ordering mode: Standard

Class: Normal

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals

Vital Signs - Last Recorded				Most recent update: 2/12/2020 8:21 AM by Riley, Lillian R, MA		
	BP 129/80 (BP Location: Left arm, Patient Position: Standing)	Pulse 7 5	Ht 6' 0.5"	Wt 87.5 kg (193 lb)	BMI 25.82 kg/m²	

Flowsheets

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

Custom Formula Dat	ta		
Row Name	02/12/20 0820	02/12/20 0817	
Adult IBW/VT Calcu	ulations		
IBW/kg	_	78.75	
(Calculated)		-LR at 02/12/20 0818	
Low Range Vt	_	472.5 mL/kg	
6mL/kg		-LR at 02/12/20 0818	
Adult Moderate Range Vt 8mL/kg	_	630 mL/kg -LR at 02/12/20 0818	
Adult High Range Vt 10mL/kg	_	787.5 mL/kg -LR at 02/12/20 0818	
IBW/kg (Calculated) (lbs)	_	173.61 -LR at 02/12/20 0818	
OTHER			
BMI (Calculated)	_	25.8	
		-LR at 02/12/20 0818	
IBW/kg	_	78.75 kg -LR at 02/12/20 0818	
(Calculated) Male IBW/kg			
(Calculated) Female	_	74.25 kg -LR at 02/12/20 0818	
BMI		25.8	
Bivii		-LR at 02/12/20 0818	
Total Weight Change	_	193 -LR at 02/12/20 0818	
Total Weight	_	+193	
Change		-LR at 02/12/20 0818	
Weight Change Since Last Visit	_	4 -LR at 02/12/20 0818	
Weight Change Since Last Visit	_	+4 -LR at 02/12/20 0818	
Internal Initial Weight -	_	0 -LR at 02/12/20 0818	
Reference Only			
Fluid Needs	_	63260 -LR at 02/12/20 0818	
BSA (Calculated - sq m)	_	2.11 sq meters -LR at 02/12/20 0818	
MAP (Calculated)	96.33 -LR at 02/12/20 0821	88.67 -LR at 02/12/20 0819	
Body Composition	Analysis		
BMI		25.8 -LR at 02/12/20 0818	
Dietitian Vitals			
BMI (Calculated)	_	25.8	
ID\\//k~		-LR at 02/12/20 0818	
IBW/kg (Calculated)	_	78.75 -LR at 02/12/20 0818	
IBW/kg	_	74.25 kg	
(Calculated) Female		-LR at 02/12/20 0818	
IBW/kg	_	78.75	
(Calculated) Males		-LR at 02/12/20 0818	
Fluid Needs			
Total Fluid	_	63260	
Estimated Needs		-LR at 02/12/20 0818	

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

Row Name	02/12/20 0820	02/12/20 0817
OTHER		
Change in SBP	-3 -LR at 02/12/20 0821	132 -LR at 02/12/20 0819

Encounter Vitals

Row Name	02/12/20 0820	02/12/20 0817
Enc Vitals		
BP	129/80 -LR at 02/12/20 0821	132/67 -LR at 02/12/20 0819
Pulse	75 -LR at 02/12/20 0821	78 -LR at 02/12/20 0819
Weight	_	87.5 kg (193 lb) -LR at 02/12/20 0818
Height	_	6' 0.5" -LR at 02/12/20 0818
Vital Signs		
BP Location	Left arm -LR at 02/12/20 0821	Left arm -LR at 02/12/20 0819
Patient Position	Standing -LR at 02/12/20 0821	Sitting -LR at 02/12/20 0819

Social Determinants

Row Name	02/12/20 08:18:38	
Alcohol Use		
How often do you have a drink containing alcohol?	Never Data migrated from History -LR at 05/18/21 1428	

Vital Signs

Row Name	02/12/20 0913	
OTHER		
Stimulants	000 -DH at 02/12/20 0813	
Sedatives	160 -DH at 02/12/20 0813	
Narcotics	080 -DH at 02/12/20 0813	

User Key

(r) = Recorded	∣By, (t) =	Taken By, ((c) = 0	Cosigned By
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Initials	Name	Effective Dates	Provider Type	Discipline
DH	Hm Interface, Documentation Incoming	_	<u> </u>	_
LR	Riley, Lillian R, MA	01/08/20 - 05/17/20	Medical Assistant	_

Patient Instructions

Will benefit from physical and occupational therapies at TIRR Memorial city. Continue present medications.

Keep physically and mentally active. Exercise regularly.



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient Instructions (continued)

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology Patient Instuctions

Patient Instructions History

Patient Instructions Revisions	Status	Date&Time	By User
Will benefit from physical and occupational therapies at TIRR Memorial city. Continue present medications. Keep physically and mentally active. Exercise regularly.	Addendum	02/21/2020 7:29 PM	LAI, EUGENE
Will benefit from physical and occupational therapies at YIRR Memorial city. Continue present medications. Keep physically and mentally active. Exercise regularly.	Addendum	02/12/2020 9:08 AM	LAI, EUGENE
Continue present medications. Keep physically and mentally active. Exercise regularly.	Signed	02/12/2020 8:33 AM	LAI, EUGENE

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary

AFTER VISIT SUMMARY



25.82

Heiaht Height 6' 0.5"

You saw Eugene C. Lai, MD on Wednesday February 12, 2020.

The following issues were addressed: Parkinson disease and Mild

Robert T. Brockman MRN: 003768603

📆 2/12/2020 8:00 AM ♀ HMNI Stanley H Appel Dept of Neurology 713-441-3780

Today's Visit

cognitive impairment.

129/80

Weiaht

193 lb

Pulse

75

Instructions from Eugene C. Lai, MD

Will benefit from physical and occupational therapies at YIRR Memorial city.

Continue present medications.

Keep physically and mentally active. Exercise regularly.



Your medications have changed today

See your updated medication list for details.



Pick up these medications at Briargrove Pharmacy -Houston TX - Houston, TX - 6435 San Felipe

apixaban • rivastigmine

Address: 6435 San Felipe, Houston TX 77057 Phone: 713-783-5704



Return in about 2 months (around 4/12/2020) for Next scheduled follow up.

What's Next

You currently have no upcoming appointments scheduled.

Today's Medication Changes

(i) Accurate as of February 12, 2020 9:52 AM. If you have any questions, ask your nurse or doctor.

CHANGE how you take these medications

rivastigmine 9.5 mg/24 hr

Place 1 patch on the skin daily. What changed: See the new instructions. Changed by: Eugene C. Lai, MD

Robert T. Brockman (MRN: 003768603) • Printed by Janet Zelaya, MA at 2/12/20 9:52 AM

Page 1 of 3 Epic

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Today's Medication Changes (continued)

Where to Get Your Medications

These medications were sent to Briargrove Pharmacy - Houston TX - Houston, TX - 6435 San Felipe 6435 San Felipe, Houston TX 77057

Phone: 713-783-5704

□ apixaban 2.5 mg tablet

□ rivastigmine 9.5 mg/24 hr

Allergies

No Known Allergies

♣ Preventive Care

Topic
SHINGLES VACCINES (1)

Due

05/28/1991

← Current Health Issues

Dementia associated with Parkinson's disease

Parkinson disease

	Relationship	Specialty	Notifications	Start End	
Pool, James L., MD	PCP - General	Endocrinology		12/26/19	
Phone: 713-798-0180					

MyChart Signup

For your convenience, Houston Methodist MyChart allows you to send messages to your doctor's office, view your test results, renew your prescriptions, schedule appointments and more. To sign up, go to HoustonMethodist.org/mychart and click on the **Sign Up Now** button in the "New User?" box. Enter your Houston Methodist MyChart Activation Code exactly as it appears below. You will not need this code once you have completed the sign-up process. This code will expire 90 days from the date of this After Visit Summary.

Houston Methodist MyChart Activation Code: QKXX4-7Z7B4-VV2WC Expires: 3/28/2020 9:52 AM

If you have questions, please call 832.667.5694 to speak with our Houston Methodist Customer Service Team. Remember, do not use Houston Methodist MyChart if you have an urgent need or request. For medical emergencies, dial **911**.

Robert T. Brockman (MRN: 003768603) • Printed by Janet Zelaya, MA at 2/12/20 9:52 AM

Page 2 of 3 Epic



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Your Medication List as of February 12, 2020 9:	52 AM
(Always use your most recent med list.	
AndroGeL 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump Generic drug: testosterone	
apixaban 2.5 mg tablet Commonly known as: ELIQUIS	Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.
buPROPion SR 100 MG 12 hr tablet Commonly known as: WELLBUTRIN SR	
carbidopa-levodopa 25-100 mg per tablet Commonly known as: SINEMET	
clonAZEPAM 0.5 MG tablet Commonly known as: KlonoPIN	Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
FISH OIL 100-160-1,000 mg capsule Generic drug: omega 3-dha-epa-fish oil	
L-METHYLFOLATE ORAL	
rivastigmine 9.5 mg/24 hr Commonly known as: EXELON	Place 1 patch on the skin daily.
SYNTHROID 75 mcg tablet Generic drug: levothyroxine	
traZODone 50 MG tablet Commonly known as: DESYREL	

Robert T. Brockman (MRN: 003768603) • Printed by Janet Zelaya, MA at 2/12/20 9:52 AM

Page 3 of 3 Epic



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/12/2020

1941, Sex: M

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary (continued)**

Visit Information

Date & Time 2/12/2020 8:00 AM

Provider Lai, Eugene C., MD Department HMNI Stanley H Appel Dept of

Encounter# 2100073526625

Neurology

Coding Summary for this Encounter

Code	Description	Service Date	Service Provider	Qty
99214	PR OFFICE OUTPATIENT VISIT 25 MINUTES	2/12/2020	Lai, Eugene C., MD	1
	Dy Darkingania diagona [COO] Mild aggritive impa		14 0.41 Other energified envious die	andana [E 44 0]

Dx: Parkinson's disease [G20], Mild cognitive impairment, so stated [G31.84], Other specified anxiety disorders [F41.8], Hereditary and idiopathic neuropathy, unspecified [G60.9]



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology

Visit Information

Р	rc	v	i	d	e	r	h	n	f	O	r	n	1	a	ti	O	n	ı

Encounter Provider	Authorizing Provider	Referring Provider
Lai, Eugene C., MD	Lai, Eugene C., MD	Pool, James L., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of	6560 Fannin Street Suite 802	713-441-3780	713-790-5079
Neurology	Houston TX 77030-2725		

Follow-up and Dispositions

Return in about 4 months (around 6/2/2021) for Next scheduled follow up.

Level of Service

Level of Service

PR OFFICE/OUTPATIENT ESTABLISHED MOD MDM 30-39 MIN

Research Study Linked to Office Visit on 2/2/2021

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/2/2021

Problems last reviewed by Lai, Eugene C., MD on 2/2/2021 1008

Dementia associated with Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1503]

Diagnosis: Dementia associated with

Parkinson's disease (HCC)

Noted on: 01/08/2020

Chronic: No

Idiopathic peripheral neuropathy [last edited by Lai, Eugene C., MD on 2/21/2020 2038]

Diagnosis: Idiopathic peripheral

neuropathy

Noted on: 02/21/2020

Chronic: No

Mixed anxiety depressive disorder [last edited by Lai, Eugene C., MD on 2/21/2020 2037]

Diagnosis: Mixed anxiety depressive

Noted on: 02/21/2020

Chronic: No

Parkinson's disease (HCC) [last edited by Lai, Eugene C., MD on 1/8/2020 1452]

Diagnosis: Parkinson's disease (HCC) Noted on: 01/08/2020 Chronic: No

Allergies as of 2/2/2021

Allergies last reviewed by Lai, Eugene C., MD on 2/2/2021 1008 No Known Allergies

History as of 2/2/2021

Medical History as of 2/2/2021

Medical last reviewed by Lai, Eugene C., MD on 2/2/2021

None

Surgical History as of 2/2/2021

Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Surgical last reviewed by Lai, Eugene C., MD on 2/2/2021 None

Family History as of 2/2/2021

Substance & Sexuality History as of 2/2/2021

Tobacco Use as of 2/2/2021

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/2/2021

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	_	_	_	_
Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
_	_	Never Used	_	Provider

Alcohol Use as of 2/2/2021

Alcohol Use last reviewed by Pena, Flor, MA on 2/2/2021

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		_	_	Provider

Drug Use as of 2/2/2021

Drug Use last reviewed by Pena, Flor, MA on 2/2/2021

Drug Use	Types	Frequency	Comments	Source
Never	_	-	_	Provider

Sexual Activity as of 2/2/2021

Sexual Activity last reviewed by Pena, Flor, MA on 2/2/2021

Sexually Active	Birth Control	Partners	Comments	Source
Defer	_	_	<u> </u>	Provider

Socioeconomic History as of 2/2/2021

Socioeconomic as of 2/2/2021

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	<u> </u>	_	_	_	English	Not Hispanic or	Caucasian	_
						Latino		

Medication List

Medication List



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

This report is for documentation purposes only. The patient should not follow medication instructions within. For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/2/2021 1008

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020
Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 75 mcg by mouth every morning.

Entered by: Riley, Lillian R, MA

Start date: 10/9/2019

Entered on: 1/8/2020
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Place 1 Squirt on the skin daily.

Entered by: Riley, Lillian R, MA Entered on: 1/8/2020

Informant: Family Member

traZODone (DESYREL) 50 MG tablet [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 50 mg by mouth nightly.

Entered by: Riley, Lillian R, MA

Start date: 3/13/2019

Entered on: 1/8/2020
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [reconciled by Riley, Lillian R, MA on 1/8/2020 1311]

Instructions: Take 1 capsule by mouth daily.

Entered by: Riley, Lillian R, MA

Entered on: 1/8/2020

Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) [reconciled by Riley, Lillian R, MA on 1/8/2020 1314]

Instructions: Take 1 tablet by mouth daily.

Entered by: Riley, Lillian R, MA

Start date: 10/1/2019

End date: 6/1/2021

Informant: Family Member

Exelon 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.

Authorized by: Lai, Eugene C., MD

Start date: 6/12/2020

Quantity: 90 patch

Ordered on: 6/12/2020

End date: 3/15/2021

Refill: 1 refill by 6/12/2021

Eliquis 2.5 mg tablet

Instructions: TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.

Authorized by: Lai, Eugene C., MD
Start date: 11/11/2020
Quantity: 180 tablet

Ordered on: 11/11/2020
End date: 2/9/2021
Refill: No refills remaining

carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Authorized by: Lai, Eugene C., MD

Start date: 11/11/2020

Quantity: 540 tablet

Ordered on: 11/11/2020

End date: 3/15/2021

Refill: 3 refills by 11/11/2021

clonAZEPAM (KlonoPIN) 0.5 MG tablet



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Instructions: TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME

Authorized by: Lai, Eugene C., MD

Ordered on: 12/22/2020
Start date: 12/22/2020
End date: 2/20/2021
Quantity: 30 tablet

Refill: 1 refill by 6/20/2021

rosuvastatin (CRESTOR) 5 mg tablet [reconciled by Pena, Flor, MA on 2/2/2021 0921]

Instructions: Take 5 mg by mouth daily.

Entered by: Pena, Flor, MA

Start date: 11/10/2020

Entered on: 2/2/2021

Informant: Family Member

Myrbetriq 50 mg tablet extended release 24 hr [reconciled by Pena, Flor, MA on 2/2/2021 0921]

Instructions: Take 50 mg by mouth daily.

Entered by: Pena, Flor, MA

Start date: 12/14/2020

Informant: Family Member

Entered on: 2/2/2021

End date: 6/1/2021

Stopped in Visit

None

Progress Notes

Progress Notes

Lai, Eugene C., MD at 2/2/2021 0930

Author: Lai, Eugene C., MD Service: — Author Type: Physician

Filed: 2/3/2021 7:59 AM Encounter Date: 2/2/2021 Creation Time: 2/2/2021 9:28 AM

Status: Signed Editor: Lai, Eugene C., MD (Physician)

NEUROLOGY FOLLOW-UP CLINIC VISIT

Patient is a 79-year-old ambidextrous man with a history of Parkinson's disease, mild cognitive impairment, REM sleep behavior disorder, ocular migraine, hyperlipidemia, hypothyroidism, atrial fibrillation, bladder cancer, glaucoma, melanoma, basal cell skin cancer, and depression.

He comes with his wife, Dorothy, for follow-up of his Parkinson's disease. Last visit was on 2/12/2020. He reports physically stable. He has retired as CEO of his software company but is still under a lot of stress. Sleep is better with trazodone and clonazepam. Appetite is good. Basic activities of daily living are independent, but slower. Gait and balance are mildly unsteady but he does not use a cane. He has no recent fall. Moods are stressed and depressed. His wife needs to help him in organizing his responsibilities and taking care of legal issues. Memory is impaired but stable. He uses Exelon patch 9.5/24h daily. He does not exercise regularly due to low back pain and also not able to go to the Houstonian for exercise. He tries to walk a little with his housekeeper every other day. He takes carbidopa/levodopa 25/100 2 tablets only 2 times a day at 8 am and 8 pm, and he typically forgets his 2 pm dose.

There is no new neurological complaint. He has slowness, stiffness, and gait imbalance. He lacks energy and is inactive. He denies recent headache, dizziness, weakness, confusion, dysarthria, dysphagia.

MEDICATIONS:

Sig

- Myrbetriq 50 mg tablet extended Take 50 mg by mouth daily. release 24 hr
- rosuvastatin (CRESTOR) 5 mg 5 mg daily. tablet
- clonAZEPAM (KlonoPIN) 0.5
 TAKE ONE TABLET BY MOUTH EVERY EVENING



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/2/2021

941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

MG tablet AT BEDTIME

carbidopa-levodopa (SINEMET) TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

25-100 mg per tablet

 Eliquis 2.5 mg tablet TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two)

times A day.

Place 1 patch on the skin daily. Exelon 9.5 mg/24 hr

buPROPion SR (WELLBUTRIN Take two tablets every morning and one every evening

SR) 100 MG 12 hr tablet to control depression

 levomefolate calcium (L-Take one tablet by mouth daily to lower homocysteine

METHYLFOLATE ORAL)

levothyroxine (SYNTHROID) 75 Take one tablet every morning for hypothyroidism

mcg tablet

· omega 3-dha-epa-fish oil (FISH Take by mouth.

OIL) 100-160-1,000 mg capsule

testosterone (ANDROGEL) Place on the skin.

20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump

traZODone (DESYREL) 50 MG Take 50 mg by mouth.

tablet

REVIEW OF SYSTEMS:

Constitutional: Positive for easy fatigue, lack of energy. Weight loss of about 3.5 lbs. since last visit.

Eyes: Positive for visual disturbance due to glaucoma. ENT: Positive for hearing loss. No nose bleed, sore throat.

Respiratory: Negative for cough and shortness of breath.

Cardiovascular: Negative for chest pain, palpitation, leg swelling.

Gastrointestinal: Positive for mild constipation. No diarrhea, abdominal pain.

Genitourinary: Positive for nocturia, frequency, urgency. No dysuria.

Musculoskeletal: Positive for low back pain. Negative for other joint pain, joint swelling, muscle pain.

Skin: Negative for rash, lesion.

Hematological: Negative for bruising, bleeding, adenopathy.

Allergy/Immunology: Negative for allergy symptoms.

Psychiatric/Behavioral: Positive for anxiety, depression, insomnia. No agitation.

Neurological: See above.

FAMILY/SOCIAL HISTORY: Lives with wife. No cigarettes and rare alcohol. They are in the process of moving to the River Oaks area closer to their son.

EXAMINATION:

Vitals:

02/02/21 0919 02/02/21 0922

BP: 122/74 133/74 BP Location: Left arm Left arm Patient Position: Sitting Standing Pulse: 84 76

Temp: 96.9 °F

Weight: 86 kg (189 lb 9.6 oz)

Height: 5' 11.5"

General: Well developed and well nourished elderly man in no acute distress. He is subdued but pleasant and cooperative.

Brockman, Robert T MRN: 003768603, DOB:

Visit date: 2/2/2021

1941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

Physical: Head and face are normal. No pain or tenderness to palpation. No edema or rash. Mild hypomimia and hypophonia.

Neurological: 'On' state

MS: He is alert and attentive. O x person, place, and time. He follows complex verbal commands. Memory is 4/4 immediate -> 0/4 delayed. Comprehension and expression are slower. Insight and judgment are mildly impaired. MoCA score (1/8/2020) = 20/30.

CN: II-XII symmetrical and adequate except bilateral hearing loss. EOM full and tongue is midline.

Motor: Strength is 5/5 and symmetrical except bilateral hip flexors, 5-/5. No tremor and mild rigidity in limbs.

Sensory: Decreased to vibration in both feet.

Coordination: F->N->F without dysmetria. Rapid alternating movements are slower bilaterally.

Gait: He arises from sitting without assistance. He walks with a slightly wide-based gait. Decreased arm swings and hesitant in turning without assistance. He can perform heel, toe walking but not tandem walking.

	VISIT DIAGNOSES:	ICD-10-CM
1.	Parkinson's disease (HCC)	G20
2.	Mild cognitive impairment	G31.84
3.	Mixed anxiety depressive disorder	F41.8
4.	Idiopathic peripheral neuropathy	G60.9

IMPRESSION:

Significant for: Clinical findings are consistent with Parkinson's disease with mild cognitive impairment.

He is under a lot of stress trying to still run his company by himself, and his wife is also stressed out.

He has signs of mild cognitive impairment and peripheral neuropathy with gait imbalance.

Neurological and cognitive examinations are without notable change from last visit.

Physical examination is stable.

PLANS:

Patient's neurologic condition and management are discussed with him and his wife at length again.

He needs to take carbidopa/levodopa 25/100 2 tablets 3 times a day at 8:30 am, 1:30 pm and 6:30 pm and on time.

Take about at least 30 minutes before or after meals.

Put Exelon patch 9.5 mg/24h topically every day on shoulders and back and rotate over 14 areas, for cognitive stabilization. Get instructions from the Internet for "Exelon patch placement'.

Continue trazodone 50 mg and clonazepam 0.5 mg at bedtime for sleep and RBD.

Continue bupropion 100 mg 2 tablets in the morning and 1 tablet at bedtime for mood stabilization.

Continue other present medications.

I will order physical and occupational therapy at home after he moves into his new house.

He should not drive his car for now.

Keep physically and mentally active. Exercise regularly.

Follow up with Dr. James Pool, PCP.

Return to clinic in 4 months.

Total time spent today in evaluation and treatment of patient, including review of previous medical records and counseling = 32 minutes.

PATIENT EDUCATION:

[x] Patient [x] Significant other(s)

Topic:

Disease specific issues [x]

Medications [x]

Medication Side effects [x]

Tests [x]



Brockman, Robert T MRN: 003768603, DOB: 1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

Treatment/follow-up plans [x]

Consults [x] Surgical plan []

Teaching Method: Discussion [x] Handouts []

Patient/family Response: Verbalize understanding and agree(s) with treatment plans [x]

Today I spent >50% of visit time on counseling and patient education.

Eugene C. Lai, M.D., Ph.D.

igene Estaims

Robert W. Hervey Distinguished Endowed Chair in Parkinson's Disease

Professor of Neurology and Neuroscience Director, Neurodegenerative Disease Clinic

Stanley H. Appel Department of Neurology Houston Methodist Neurological Institute & Weill Cornell Medical School 6560 Fannin, Suite 802 Houston, Texas 77030

TEL. 713-441-0239 FAX. 713-790-5044

Electronically signed by Lai, Eugene C., MD at 2/3/2021 7:59 AM

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology **All Parent Orders**

Medications - All Orders

rosuvastatin (CRESTOR) 5 mg tablet [335306867] Patient-reported historical medication

Ordering date: 02/02/21 0921 Ordering mode: Standard

Authorized by: Provider, Historical, MD

Frequency: Routine Daily 11/10/20 - Until Discontinued Class: Historical Med

Myrbetriq 50 mg tablet extended release 24 hr [335306868] Patient-reported historical medication

Ordering date: 02/02/21 0921 Ordering mode: Standard

Authorized by: Provider, Historical, MD

Frequency: Routine Daily 12/14/20 - 06/01/21

Class: Historical Med

Discontinued by: Francia, Loi S 06/01/21 1237

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals (continued)

Most recent update: 2/2/2021 9:24 AM by Pena, Flor, Vital Signs - Last Recorded MA BP Temp 96.9 °F Pulse Ht 133/74 (BP 5' 11.5" 86 kg (189 lb 9.6 oz) 76 Location: Left arm, Patient Position: Standing) BMI 26.08 kg/m²

Flowsheets

Custom Formula Data

Row Name	02/02/21 0922	02/02/21 0919
Adult IBW/VT Calcu	llations	
IBW/kg	_	76.45 -FP at 02/02/21 0919
(Calculated)		
Low Range Vt 6mL/kg	_	458.7 mL/kg -FP at 02/02/21 0919
Adult Moderate	_	611.6 mL/kg
Range Vt 8mL/kg		-FP at 02/02/21 0919
Adult High Range	_	764.5 mL/kg
Vt 10mL/kg		-FP at 02/02/21 0919
IBW/kg (Calculated) (lbs)	_	168.54 -FP at 02/02/21 0919
OTHER		11 dt 02/02/21 0010
BMI (Calculated)		26.08
Divii (Calculated)	_	-FP at 02/02/21 0919
IBW/kg	_	76.45 kg
(Calculated) Male		-FP at 02/02/21 0919
IBW/kg	_	71.95 kg -FP at 02/02/21 0919
(Calculated) Female		-FF at 02/02/21 0919
BMI	_	26.08
		-FP at 02/02/21 0919
Total Weight	_	189.6
Change		-FP at 02/02/21 0919
Total Weight Change	_	+189.6 -FP at 02/02/21 0919
Weight Change	_	-3.4
Since Last Visit		-FP at 02/02/21 0919
Weight Change	_	-3.4
Since Last Visit		-FP at 02/02/21 0919
Internal Initial Weight -	_	0 -FP at 02/02/21 0919
Reference Only		
Fluid Needs	_	62172 FD + 0/00/04 0040
BSA (Calculated	_	-FP at 02/02/21 0919 2.08 sq meters
- sq m)		-FP at 02/02/21 0919
ED VITALS	2	3
FORMULA	-FP at 02/02/21 0924	-FP at 02/02/21 0922
MAP (Calculated)	93.67 -FP at 02/02/21 0924	90 -FP at 02/02/21 0922
Body Composition A		11 M ON VIII 1 VVII
BMI	—	26.08
		20.00

Brockman, Robert T MRN: 003768603, DOB: 1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

		-FP at 02/02/21 0919
Dietitian Vitals		
BMI (Calculated)	_	26.08 -FP at 02/02/21 0919
IBW/kg (Calculated)	_	76.45 -FP at 02/02/21 0919
IBW/kg (Calculated) Female	_	71.95 kg -FP at 02/02/21 0919
IBW/kg (Calculated) Males	_	76.45 -FP at 02/02/21 0919
Fluid Needs		
Total Fluid Estimated Needs	_	62172 -FP at 02/02/21 0919
Relevant Labs and	Vitals	
Temp (in Celsius)	_	36.1 -FP at 02/02/21 0922

Data

Row Name	02/02/21 0922	02/02/21 0919	
OTHER			
Change in SBP	11 -FP at 02/02/21 0924	122 -FP at 02/02/21 0922	

Encounter Vitals

Row Name	02/02/21 0922	02/02/21 0919
Enc Vitals		
BP	133/74 -FP at 02/02/21 0924	122/74 -FP at 02/02/21 0922
Pulse	76 -FP at 02/02/21 0924	84 -FP at 02/02/21 0922
Temp	_	96.9 °F -FP at 02/02/21 0922
Weight	_	86 kg (189 lb 9.6 oz) -FP at 02/02/21 0919
Height	_	5' 11.5" -FP at 02/02/21 0919
Vital Signs		
BP Location	Left arm -FP at 02/02/21 0924	Left arm -FP at 02/02/21 0922
Patient Position	Standing -FP at 02/02/21 0924	Sitting -FP at 02/02/21 0922

Social Determinants

Row Name	02/02/21 09:19:45
Alcohol Use	
How often do you have a drink containing alcohol?	Never Data migrated from History -FP at 05/18/21 1428

Vital Signs		
Row Name	02/02/21 1019	
	-1.0/0/04 0.00 DM	Da 05

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/2/2021

1941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

OTHER		
Stimulants	000 -DH at 02/02/21 0919	
Sedatives	220 -DH at 02/02/21 0919	
Narcotics	100 -DH at 02/02/21 0919	

User Key

(r) = Recorded By, (t) = Taken By, (c) = Cosigned By

Initials	Name	Effective Dates	Provider Type	Discipline
FP	Pena, Flor, MA	11/21/20 - 03/15/21	Medical Assistant	_
DH	Hm Interface, Documentation Incoming	_	_	_

Patient Instructions

Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals.

Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'.

Will order physical therapy after you moved to your new house.

No driving for now.

Continue other present medications.

Keep physically and mentally active. Exercise regularly.

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology Patient Instuctions

Patient Instructions History

Patient Instructions Revisions	Status	Date&Time	By User
Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals. Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'. Will order physical therapy after you moved to your new house. No driving for now. Continue other present medications. Keep physically and mentally active. Exercise regularly.	Addendum	02/02/2021 10:06 AM	LAI, EUGENE
Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals. Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'. Will order physical therapy after you moved to your new house. Continue other present medications. Keep physically and mentally active. Exercise regularly.	Signed	02/02/2021 10:05 AM	LAI, EUGENE

Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/2/2021

1941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary

AFTER VISIT SUMMARY



Robert T. Brockman MRN: 003768603

Instructions from Eugene C. Lai, MD

Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals. Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'. Will order physical therapy after you moved to your new house. No driving for now.

Continue other present medications.

Keep physically and mentally active. Exercise regularly.



Return in about 4 months

(around 6/2/2021) for Next scheduled follow up.

What's Next

You currently have no upcoming appointments scheduled.

Allergies

No Known Allergies

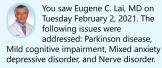
Preventive Care

Topic	Due
COVID-19 VACCINE (1 of 2)	05/28/1957
SHINGLES VACCINES (1)	05/28/1991

← Current Health Issues

Dementia associated with Parkinson's disease Nerve disorder Mixed anxiety depressive disorder Parkinson disease

Today's Visit

















Robert T. Brockman (MRN: 003768603) • Printed by Eugene C. Lai, MD at 2/2/21 10:09 AM

Page 1 of 3 Epic



Brockman, Robert T MRN: 003768603, DOB: Visit date: 2/2/2021

1941, Sex: M

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

🟻 Patient Care Team 🏲

Pool, James L., MD PCP - General Endocrinology 12/26/19	
_ , , , , , , , , , , , , , , , , , , ,	
Relationship Specialty Notifications Start En	nd

Phone: 713-798-0180 Fax: 713-798-0174

MyChart Signup

Our records indicate that you have an active Houston Methodist MyChart account.

You can view your "After Visit Summary" by going to Houston Methodist MyChart username and password. If you are under 18 and would like to view your "After Visit Summary," please have your parent or guardian login with his or her own Houston Methodist MyChart username and password and access your records.

If you have questions, please call 832.667.5694 to speak with our Houston Methodist Customer Service Team. Remember, do not use Houston Methodist MyChart if you have an urgent need or request. For medical emergencies, dial **911**.

Robert T. Brockman (MRN: 003768603) • Printed by Eugene C. Lai, MD at 2/2/21 10:09 AM

Page 2 of 3 Epic



Brockman, Robert T MRN: 003768603, DOB:

941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Your Medication List as of February 2, 2021 10:09 AM

(i) Always use your most recent med list.	
AndroGeL 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump Generic drug: testosterone	Place on the skin.
buPROPion SR 100 MG 12 hr tablet Commonly known as: WELLBUTRIN SR	Take two tablets every morning and one every evening to control depression
carbidopa-levodopa 25-100 mg per tablet Commonly known as: SINEMET	TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
clonAZEPAM 0.5 MG tablet Commonly known as: KlonoPIN	TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME
Eliquis 2.5 mg tablet Generic drug: apixaban	TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.
Exelon 9.5 mg/24 hr Generic drug: rivastigmine	Place 1 patch on the skin daily.
Fish Oil 100-160-1,000 mg capsule Generic drug: omega 3-dha-epa-fish oil	Take by mouth.
L-METHYLFOLATE ORAL	Take one tablet by mouth daily to lower homocysteine
Myrbetriq 50 mg tablet extended release 24 hr Generic drug: mirabegron	Take 50 mg by mouth daily.
rosuvastatin 5 mg tablet Commonly known as: CRESTOR	5 mg daily.
Synthroid 75 mcg tablet Generic drug: levothyroxine	Take one tablet every morning for hypothyroidism
traZODone 50 MG tablet Commonly known as: DESYREL	Take 50 mg by mouth.

Robert T. Brockman (MRN: 003768603) • Printed by Eugene C. Lai, MD at 2/2/21 10:09 AM

Page 3 of 3 Epic



Brockman, Robert T MRN: 003768603, DOB:

1941, Sex: M

Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology **Diagnosis Summary (continued)**

Visit Information

Date & Time Provider Department Encounter # HMNI Stanley H Appel Dept of 2100089907549 2/2/2021 9:30 AM Lai, Eugene C., MD

Neurology

Coding Summary for this Encounter

Code	Description	Service Date	Service Provider	Qty
99214	PR OFFICE/OUTPATIENT ESTABLISHED MOD	2/2/2021	Lai, Eugene C., MD	1
	MDM 30-39 MIN			

Dx: Parkinson's disease [G20], Mild cognitive impairment, so stated [G31.84], Other specified anxiety disorders [F41.8], Hereditary and idiopathic neuropathy, unspecified [G60.9]

Message

From:

Bob Brockman [bob_brockman@reyrey.com]

Sent:

1/20/2019 12:42:27 AM

To:

'Stuart Yudofsky' [stuart.yudofsky@gmail.com]

Stuart,

The meeting today went excellently – in spite of some unfortunate news. My belief is that when the whole truth comes out, that issue may look somewhat differently.

On another subject...

Looking thru some more of the symptoms on Google I have these as well...

- -bad posture caused by sunken chest
- -overall lack of stamina and strength
- -major loss of balance I couldn't stand up on the foredeck of a flats boat
- -skin conditions dryness, scaly skin, pretty much all over
- -swallowing has changed lots more saliva, tendency to partially choke a little on food happening more often
- -depression
- -ED starting about a year ago
- -close to the edge on incontinence requires thoughtful planning of opportunities for urination which is sometimes every hour
- -reduced confidence in my ability to deal with rush hour traffic
- -reduced memory ability
- -reduced organizational ability

CONCLUSION

Please direct me to the right doctor as soon as possible. I am tied up on Tuesday. Friday I am in San Francisco – coming. home on Sunday evening.

I am home the whole week of 1/28.

Thanks for your help.

Bob





Interview with Frank Gutierrez by Marc Agronin, MD on October 3, 2021

Frank Gutierrez is a personal aide to Robert Brockman. He has worked with Mr. Brockman for the past year plus and has seen him slowly but steadily decline physically and mentally. Mr. Brockman has needed significant assistance with daily functioning over the past year, and it has worsened since the most recent series of hospitalizations. Mr. Brockman had a recurrent urinary tract infection 2-3 weeks ago in hospital. Prior to the hospital he seemed different; not coherent; weak; not alert; fever 99-100 and then 102.3. He had a glazed look; not eating. Since coming home: Sleep; varies but OK. Appetite: Not great since hospital -- only 10-20% but improving. There is a lot of confusion with needing reminding and cueing. Does not make PB sandwich as he stated but with supervision. He recently fell in the bathroom and had a mild head bump, and redness on his shoulder and no swelling. There is some mild agitation every once in a while when he wants to do something and will pack a briefcase and try to go out as if he has meeting. Frank and Dorothy hen he has to tell him he is at home and not working at the office -- and he gets angry.

Current medications:

MORNING:

AZO cranberry urinary tract health 1 capsule in AM Exelon patch 9.5 mg
Miralax capful
Carbidopa-levodopa 25-100 2 tablets
Bupropion SR 200 mg
Synthroid 75 mcg
Eliquis 2.5 mg
Stool softener 240 mg softgel
Vit D3 2000 IU 2 pills
Acidophilus softgel 1 pill

NOON:

Carbidopa-levodopa 25-100 2 tablets Cephalexin 250 mg

4 pm: Carbidopa-levodopa 25-100 2 tablets

NIGHT:

Trazodone 50 mg Bupropion SR 100 Eliquis 2.5 mg Rosuvastatin 5 mg Quetiapine 25 mg



